FLASHES AND PLUGS

PRICE OF PEACE. It wasn't the biggest sale of the month, but it made MacDougall, the telephone-hating dog, into a satisfied subscriber. MacDougall, pet of a Chicago subscriber, went into a frenzy each time the telephone rang and did his best to treat the instrument as he would a cat.

The family veterinarian had an explanation. He said the telephone bell had been near MacDougall's bed when he was recovering from a broken leg. He associated the ringing of the bell with his suffering and naturally became a little annoyed. But no explanation could stop MacDougall.

Illinois Bell people heard about the family's telephone trouble. They called the subscriber and suggested the substitution of a xylophone chime for the bell. The subscriber agreed that the additional charge was a cheap price to pay for peace. The installation was made and now MacDougall's peaceable as a lamb—he scarcely bats an eye when the chimes peal to announce a call.

• • •

DERRING-DO. A crowd awaited a Kentucky police captain recently when he answered the call of a local resident to "Come quick with your gun—there's a copperhead at my place."

Confidently assuring the bystanders he would not miss, the chief crawled silently through the weeds toward the snake. He aimed his shotgun carefully, fired, then waited a moment to see if the snake moved. It didn't.

He picked up his "kill" to display it to the crowd.

It was an old piece of rubber hose.

• • •

PINNACLE. A boy sought a job at a drugstore, relates the Chesapeake & Potomac Telephone Co. *Call*. The druggist prepared to fill in the application form.

"Your name?"

"Alexander Graham Bell."

"That's a pretty well known name isn't it?"

"It ought to be," the boy replied. "I've been delivering groceries in this neighborhood for two years."

• • •

BATTER UP. A woman telephoned The Milwaukee (Wis.) *Journal* early one morning and wanted to know how the weather was in Cleveland. The sun was shining, she was told, and although showers were expected that night, it looked like the world series game would be played.

The woman was delighted. "I'm having guests for lunch," she explained, "and I had to know whether to set the table in front of the television set."

CIRCULATION

Guaranteed circulation of this issue is 10,119, of which 9,620 is paid.

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

October 16, 1954

Contents

CARRIER PROVES IN OVER SHORT ROUTE... 17
By Roscoe D. Pontius and Arthur F. Brubaker

IN THE NATION'S CAPITAL... 20
By Francis X. Welch

THE PLANT MAN'S NOTEBOOK... 22
By Ray Blain

PLANT MAN'S QUIZ... 23
By Ray Blain

THE OPERATOR'S CORNER... 26
By Mayme Workman

AUTOMATIC PBX TRUNK ASSIGNMENTS... 30
By G. R. Brackett

REGULATORY TRENDS IN THE STATE CAPITALS... 32
By Bethune Jones

COURTS AND COMMISSIONS... 34

H. D. FARGO Jr., *President & Advertising Manager*
R. C. RENO, *Vice President & Editor*
H. D. FARGO, *Vice President & Treasurer*
A. J. STULTS, *Secretary & Western Manager*
DAN FARGO, *Managing Editor*
FRANCES E. CRETCHER, *Associate Editor*
RAY BLAIN, *Technical Editor*
FRANCIS X. WELCH, *Washington Editor*
MAYME WORKMAN, *Traffic Editor*
VIVIAN RYDEN, *Circulation Manager*

WESTERN REPRESENTATIVES:
McDonald-Thompson, San Francisco, Cal.
Also offices in Los Angeles; Seattle, Wash.; Houston, Tex., and Denver, Colo.

Published by
TELEPHONY PUBLISHING CORP.

Vol. 147, No. 16. Published every week on Saturday by TELEPHONY PUBLISHING CORPORATION, 608 South Dearborn St., Chicago (5), Ill. 20 cents per copy (except special issues). Subscription $3.50 per year U. S.; $4.50 Countries in U. S. Spanish Postal Zone; $4.50 Canada; $5.50 Other Countries.

608 S. Dearborn St., Chicago (5), Ill., U. S. A.
Telephone WA bash 2-2435

FLASHES AND PLUGS

PRICE OF PEACE. It wasn't the biggest sale of the month, but it made MacDougall, the telephone-hating dog, into a satisfied subscriber. MacDougall, pet of a Chicago subscriber, went into a frenzy each time the telephone rang and did his best to treat the instrument as he would a cat.

The family veterinarian had an explanation. He said the telephone bell had been near MacDougall's bed when he was recovering from a broken leg. He associated the ringing of the bell with his suffering and naturally became a little annoyed. But no explanation could stop MacDougall.

Illinois Bell people heard about the family's telephone trouble. They called the subscriber and suggested the substitution of a xylophone chime for the bell. The subscriber agreed that the additional charge was a cheap price to pay for peace. The installation was made and now MacDougall's peaceable as a lamb—he scarcely bats an eye when the chimes peal to announce a call.

• • •

DERRING-DO. A crowd awaited a Kentucky police captain recently when he answered the call of a local resident to "Come quick with your gun—there's a copperhead at my place."

Confidently assuring the bystanders he would not miss, the chief crawled silently through the weeds toward the snake. He aimed his shotgun carefully, fired, then waited a moment to see if the snake moved. It didn't.

He picked up his "kill" to display it to the crowd.

It was an old piece of rubber hose.

• • •

PINNACLE. A boy sought a job at a drugstore, relates the Chesapeake & Potomac Telephone Co. *Call*. The druggist prepared to fill in the application form.

"Your name?"

"Alexander Graham Bell."

"That's a pretty well known name isn't it?"

"It ought to be," the boy replied. "I've been delivering groceries in this neighborhood for two years."

• • •

BATTER UP. A woman telephoned The Milwaukee (Wis.) *Journal* early one morning and wanted to know how the weather was in Cleveland. The sun was shining, she was told, and although showers were expected that night, it looked like the world series game would be played.

The woman was delighted. "I'm having guests for lunch," she explained, "and I had to know whether to set the table in front of the television set."

CIRCULATION

Guaranteed circulation of this issue is 10,119, of which 9,620 is paid.

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

October 16, 1954

Contents

CARRIER PROVES IN OVER SHORT ROUTE... 17
By Roscoe D. Pontius and Arthur F. Brubaker

IN THE NATION'S CAPITAL... 20
By Francis X. Welch

THE PLANT MAN'S NOTEBOOK... 22
By Ray Blain

PLANT MAN'S QUIZ... 23
By Ray Blain

THE OPERATOR'S CORNER... 26
By Mayme Workman

AUTOMATIC PBX TRUNK ASSIGNMENTS... 30
By G. R. Brackett

REGULATORY TRENDS IN THE STATE CAPITALS... 32
By Bethune Jones

COURTS AND COMMISSIONS... 34

H. D. FARGO Jr., *President & Advertising Manager*
R. C. RENO, *Vice President & Editor*
H. D. FARGO, *Vice President & Treasurer*
A. J. STULTS, *Secretary & Western Manager*
DAN FARGO, *Managing Editor*
FRANCES E. CRETCHER, *Associate Editor*
RAY BLAIN, *Technical Editor*
FRANCIS X. WELCH, *Washington Editor*
MAYME WORKMAN, *Traffic Editor*
VIVIAN RYDEN, *Circulation Manager*

WESTERN REPRESENTATIVES:
McDonald-Thompson, San Francisco, Cal.
Also offices in Los Angeles; Seattle, Wash.; Houston, Tex., and Denver, Colo.

Published by
TELEPHONY PUBLISHING CORP.

Vol. 147, No. 16. Published every week on Saturday by TELEPHONY PUBLISHING CORPORATION, 608 South Dearborn St., Chicago (5), Ill. 20 cents per copy (except special issues). Subscription $3.50 per year U. S.; $4.50 Countries in U. S. Spanish Postal Zone; $4.50 Canada; $5.50 Other Countries.

608 S. Dearborn St., Chicago (5), Ill., U. S. A.
Telephone WA bash 2-2435

THE AUTHORS—ROSCOE D. PONTIUS (left) is general manager and ARTHUR F. BRUBAKER (right) is general plant supervisor of the Rochester (Ind.) Telephone Co. Mr. Pontius has been associated with this company since 1909. He served successively as a groundman in the plant department, wire chief, company secretary, and office manager before his appointment as general manager in 1934. For the past 20 years, Mr. Pontius has been a director of the Indiana Telephone Association, serving two years as president. Mr. Brubaker joined the Rochester company in 1939 as plant clerk. Three years later he was promoted to wire chief and plant accountant. In 1952, he was advanced to General Plant Supervisor. In 1953, he was nominated assistant secretary, which office he now holds in addition to general plant supervisor.

Carrier Proves In Over Short Route

By ROSCOE D. PONTIUS and ARTHUR F. BRUBAKER

Progressive Independent, Rochester Telephone Co., With 3,500 Stations, Installs High Frequency Carrier on 11-Mile Circuit in Indiana

THE ADVANTAGES of using carrier to increase medium and long-haul toll circuits have been known to most telephone men for some time. Not so well known or widely publicized are the applications of carrier systems on short toll routes.

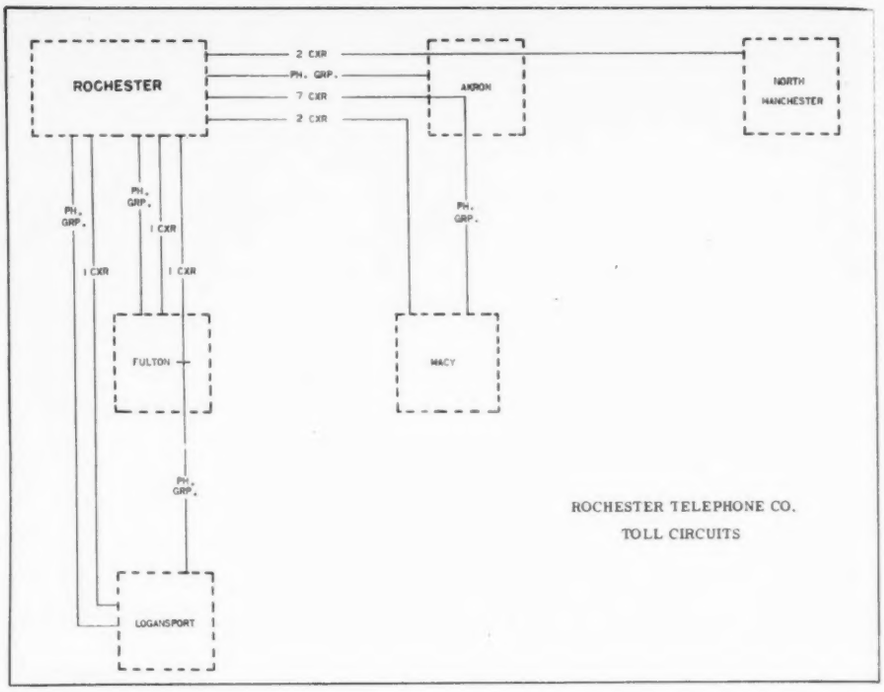
There apparently are still a considerable number of telephone managements who regard carrier as something to be used only by large companies. Our own feeling is that any company with toll circuits may be able to benefit from the use of carrier. Furthermore, there is no reason to believe that carrier must be used on circuits many miles in length to prove in. There is proof that carrier often will prove in on routes of a dozen miles or less.

The Rochester Telephone Co. recently completed installation of a high frequency carrier system on an 11-mile route. The company chose carrier because it could handle circuit expansion better than new open wire or cable construction. We have no carrier engineers, but our experience to date indicates that high frequency carrier is as easy to use as the low frequency equipment already installed by many independent companies, including ourselves.

Our company has 3,500 stations. Our only exchange is in Rochester, a city of 5,000 population and the seat of Fulton County in northern Indiana. We have toll circuits to the communities of Akron, 11 miles to the east; Macy, which is 7 miles south of Akron; and Fulton, 8 miles south of Rochester. Exchanges in these towns are operated by the General Telephone Co. of Indiana, but Rochester serves as the operator toll center for both Akron and Macy.

Location of these towns and the num-

Fig. 1. Schematic of toll circuits of Rochester Telephone Co.



ber of toll circuits we now have between each are shown in *Fig. 1.*

It was early this year that Rochester was designated as the operator toll center for Macy, which has an automatic exchange. At about the same time, the Akron exchange was converted to automatic. Thus, it became evident that we would be handling increased toll traffic in Rochester and would need to put in more trunks to Akron and Macy.

We had two wire pairs between Rochester and Akron and a total of seven circuits. We had reached this number several years ago by adding four carrier circuits—two channels of stackable type carrier on each pair—to the phantom group. The only circuits from Akron on to Macy were provided by a phantom group owned by the connecting company.

A survey of toll traffic needs showed that by the end of this year we would need 12 toll circuits from Rochester to the two towns of Akron and Macy. This was five more than we had early in 1954. By next year we would need 13 circuits, according to the survey, and by 1965 we would need a total of 15.

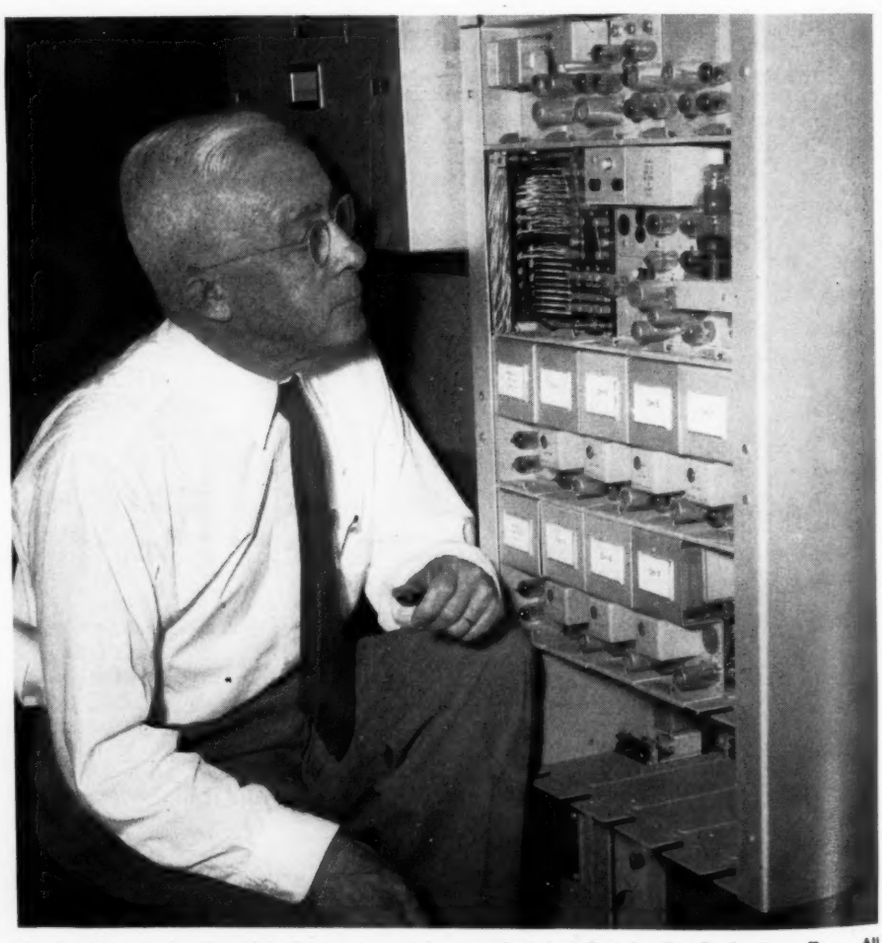
We could have added two more channels of low frequency carrier to our lines, but this would not have met even our immediate needs. Stringing new wires or adding a cable would have been difficult and costly. New open wire construction would have necessitated considerable changes in the pole lead. A cross-arm would have had to be added to many poles, many other poles would have had to be replaced, and there would have been much transposition work required. The cost of a cable would have been too great for the small number of circuits needed.

The obvious answer to our problem, then, was a high frequency carrier system that could be added to the existing wire lines and provide enough circuits for our immediate needs and be expandable later for future circuit growth requirements. The carrier equipment that seemed to fit this description perfectly was a new miniaturized system which provides from four to 12 voice channels in the frequency range between 40 and 150 kc.

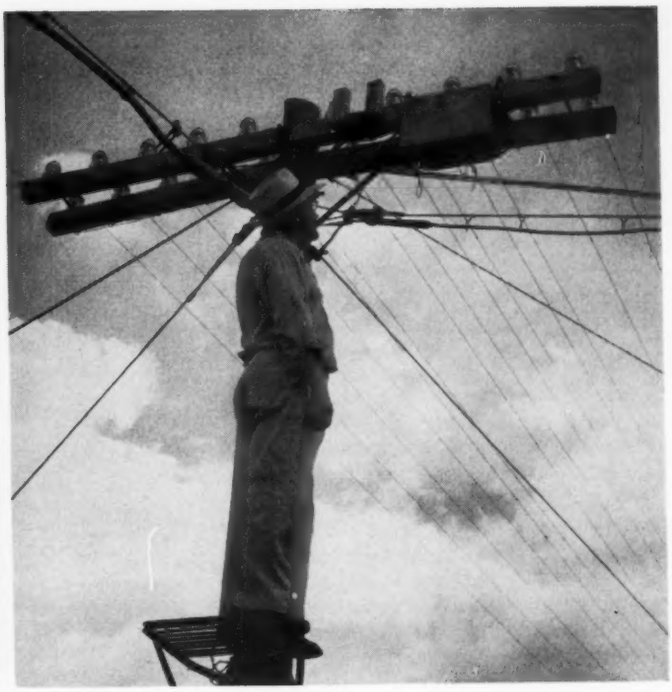
The planning and engineering work in connection with the new system installation was done by Plant Superintendent Arthur Brubaker and his assistant, Cy Weber, with the assistance of B. L. Arnold, division manager of carrier and radio sales for Automatic Electric Sales Corp.

It was decided that initially we would equip only seven of the 12 channels available in the carrier system. We knew that we could add from one to five circuits easily and economically at future dates by the addition of plug-in channel units.

The west terminal of the system was installed in our Rochester office, as shown below. The east terminal is in a small building erected in Akron by the General Telephone Co. of Indiana to house its automatic equipment. In-



Mr. Pontius checks the high frequency carrier terminal installed in the Rochester office. All terminal equipment for the presently installed seven channels, plus space for five additional channels, is contained in this 19-inch-by-32-inch, factory-wired equipment shelf. Plug-in channel units to provide more circuits can be added at any time in the empty space at the bottom of the shelf.



LEFT PHOTO: Mr. Brubaker slides a plug-in channel unit into place in the new carrier terminal at Akron, which is 11 miles from Rochester. Four of the seven high-frequency circuits terminate on the dial switchboard at Akron. The other three, by use of repeating coil hybrids and precision networks, are extended seven miles to Macy on a phantom group. RIGHT PHOTO: Wire Chief CY WEBER is looking at the weatherproof housing for pole-mounted line filters where the v-f transposed wire line enters the cable near Rochester. Line filters also are pole-mounted near Akron. The weatherproof housing shown here is cast aluminum with a hinged cover for easy access to the filter terminals for installation and inspection.

stallation of the east terminal in Akron is shown in "left photo" (above).

The new high frequency carrier is on the same side circuit as two channels of low frequency carrier with X allocation. Four of the high frequency circuits terminate on the dial switchboard at Akron. The other three, by use of repeating coil hybrids and precision networks, are extended from Akron to Macy on a phantom group. The precision networks and repeating coil hybrids make it possible to utilize the full gain of the carrier channels, thereby providing high level toll circuits between Rochester and Macy. The two low frequency carrier circuits with X allocation were extended from Akron on to North Manchester, 15 miles east. The other two low frequency carrier circuits, which have S allocation, were extended to Macy by moving the terminal equipment there from Akron. We also have the phantom group between Rochester and Akron.

Meanwhile, to our phantom group between Rochester and Fulton we added two channels of low frequency carrier. One of these carrier circuits terminates at Fulton, the other extends to Logansport 15 miles farther south.

So we now have seven toll circuits between Rochester and Akron, five between Rochester and Macy, two from Rochester to North Manchester in conjunction with General Telephone Co. of Indiana, four to Fulton, and one to Logansport in conjunction with the General company. This total of 19 toll circuits is nearly double the 10 we had to these towns previously.

Engineering the new installation was complicated by the fact that the 11-mile circuit from Rochester to Akron goes through three different cables as well as the open wire. The first mile outside Rochester the circuit is 22-gauge cable, and then for the next two miles it's 16-gauge quadded cable. The next seven miles are 104 mil copper wire, then there is another mile of 22-gauge cable before Akron is reached.

In preparation for the installation, line filters were pole-mounted where the v-f transposed wire line enters the cable at each end, as shown in "right photo" (above). Composite equipment was installed at both Rochester and Akron for the phantom circuits.

The carrier terminals are ac operated. The wiring necessary for their installation consisted of 110-volt ac connections, 48-volt signal battery leads for the alarms and telephone set, and cabling to the carrier frames for the drop and signal circuits.

When the equipment was received in Rochester in late April, the installation work was done by Mr. Brubaker and Mr. Weber. Although neither man had extensive carrier experience, they encountered no trouble in setting up the terminals. The channel units and associated equipment are plug-in units, so it was not difficult to fit them into the proper places in the 19-by-32-inch, factory-wired equipment shelf.

Jack Hite, Automatic Electric staff engineer, came from Chicago to assist with the lineup, which took two days. The lineup measurements were made with a vacuum tube voltmeter and a 1,000-cycle oscillator.

The seven new carrier circuits were cut in for west-to-east service on July 22. One month later the system was turned up for full use as east-to-west service was cut in.

The carrier circuits have been operating satisfactorily since they were turned up. One thing that has been obvious—to customers as well as ourselves—is the improved quality of the toll circuits. The carrier circuits definitely provide better transmission than the physicals we had been using. Toll traffic has increased in recent months, and we expect the addition of the new circuits to help bring about a continuing gain in toll revenue.

Total cost of buying and installing the new carrier equipment was $300 per circuit mile. While that may sound high at first, it must be remembered that we are using it over a short route of 11 miles. This investment was not as high as would have been the cost of new wire lines.

If we had installed the full 12 channels available in the system, rather than just seven as we did, the cost per circuit mile would have been considerably lower than the $300. Now that we already have the equipment shelves, power supplies, pole-mounted line fil-

(Please turn to page 44)

★ ★ ★ IN THE ★ ★ ★ NATION'S CAPITAL

by FRANCIS X. WELCH — WASHINGTON EDITOR

"Washington Plan" for automatic sliding scale rate adjustment appears on way out. Discusses New York, Michigan and North Carolina Bell System rate increase cases. New statistics available on success of REA rural telephone loan program.

ONE of the old landmarks of public utility regulation in the United States for many years seems doomed to be swept away in the near future. It is the so-called "Washington plan" for automatic sliding-scale rate adjustment under which the utility company and the utility consumers shared so-called "profits" in excess of a basic rate of return.

The Washington plan never did involve telephone rates. And from its very nature it never could be even partially successful in the field of telephone rate-making. It was first invoked back in 1924 by the District of Columbia Public Utilities Commission for electric rates in the Nation's Capital. It seemed to work so well for awhile that the Washington Gas Light Co., which furnishes gas in the Capital City, asked and received a similar plan.

The commission authorized the gas company to set up an "automatic rate adjustment" plan of its own. As already indicated, the local telephone company (Chesapeake & Potomac Telephone Co.) did not join in that particular arrangement. The main reason for this was that any profit sharing plan must be based on a decreasing unit cost of production as the volume of business increases. It works out that way for kilowatt-hours, and to some extent with cubic feet of gas (although not so much as in the case of electricity).

Telephone expenses, however, do not recede—per unit of service—with the increasing volume of service in the same exchange community. If anything, telephone company experience is in the opposite direction. So, it is easy to see that the "Washington plan" would never be a bargain for the telephone business.

As matters turned out over the past three decades, the "Washington plan" did not prove to be a bargain for the electric and gas companies. Potomac Electric Power Co. set up the original plan in 1924. The Washington Gas Light Co. got their plan in 1935, but were rid of it in 1947. Finally, early in October, the Potomac Electric Power Co. made the announcement, which had long been expected, that the electric company would like to abandon its plan as of the end of 1954—just 30 years after it was installed.

But the rise and fall of the "Washington plan" was an interesting experiment which telephone people as well as other utility people might well bear in mind for future reference. Here is how the plan worked:

(1) The electric company and the public utilities commission agreed on a basic rate of return. Under the original agreement this was 7½ per cent.

(2) The commission and the utility company also agreed on a fundamental rate base for the value of the property upon which the return would be computed. The rate base would be brought up to date from year to year by adding the cost of "additions and betterments" and subtracting items retired from service for depreciation, obsolescence, or other reasons.

(3) The initial rates were fixed so as to yield the basic rate of return as near as could be estimated.

(4) If in succeeding years the company's business grew and improved so as to yield earnings in excess of the basic rate of return, the amount of such excess was to be shared between the utilities and its consumers on a 50-50 basis.

(5) The utility company would receive its "share" of the excess of earnings in the form of additional return over and above the basic rate of return.

(6) The customers would receive their share of excess earnings in the form of rate reductions which would be automatically computed and made effective from year to year by commission order.

(7) The plan was supposed to work in the opposite direction when earnings fell *below* the basic rate of return. The utility was supposed to absorb half of the deficit out of earnings and the customers were supposed to pay their share of *increased* rates.

The plan was a tremendous success for nearly a decade. In fact it was too much of a success for the good of the plan. Year after year Potomac Electric Power Co. earned more than its basic rate of return. Year after year the company's "take" mounted beyond 7½ per cent. Yet, the customers were getting their share in the form of reduced rates. Year after year the electric rates in Washington, D. C., decreased automatically, until by 1932 the Capital City had the lowest rate in the entire United States per kilowatt-hour, compared with all other major cities.

Magazine articles appeared and regulatory experts came to Washington to observe the plan. Enthusiastic writers (including your own correspondent) in those days wondered whether a regulatory panacea had not been discovered. No more pulling and hauling in the commissions and courts. No more time-consuming and expensive rate cases.

"Partnership" had been substituted for a spirit of adverse interest between the utility and its customers. Regulation had become an automatic mathematical process. Regulatory commissions merely had to sit at their desks and twiddle their thumbs waiting for the annual figures to be added up at the end of the year, so as to see how the next melon would be cut between company earnings and customer reductions.

What was happening during this period was a fortunate cycle of expanding production economy in electrical technology, combined with expanding population, growth and use in the District of Columbia. The more electricity people used the cheaper their rates became.

Then came the fly in the ointment. Local newspapers and self-appointed champions of the custom began to

grumble that the utility company's annual earnings were "too high." These earnings had climbed to 9½ per cent! This was too much, even if it did mean that the customers were getting their share of the benefits. A "proceeding" to "modify" the plan was commenced by the so-called people's counsel of the District of Columbia in 1932. There resulted a "consent decree" under which the basic rate of return was reduced to 7 per cent.

This was the beginning of a series of such "modifications." The basic rate of return has been modified a number of times since then. Even the company's percentage share has diminished and the customer's share has been increased. The basic return finally dwindled down to 5½ per cent by order of the District of Columbia commission two years ago.

The final blow came when the deflationary period, which preceded World War II, was succeeded by the inflationary period which followed World War II. The expenses began to grow and increase and the company for the first time failed to earn its basic rate of return (even after it had been repeatedly lowered) in 1948, and in only one year (1952) since then, has it been able to cover the reduced basic return.

In other words, the "Washington plan" had become a one-way street. It was fine in "good times," as long as it was producing rate reductions. But it ran into repeated demands for modifications and controversial regulatory proceedings as soon as it required even a modest rate increase.

Small wonder, therefore, that the utility company decided to junk such a one-sided arrangement. On Oct. 4, 1954, the Potomac Electric Power Co. applied to the District of Columbia commission for a 10 per cent increase in rates, pointing out that it had failed to earn a 5½ per cent return under its present rates. In its petition for a rate increase, the company made the following statement, which is likely to become the swan song of the "Washington plan":

". . . the existence of the Plan has not served to avert the necessity for full scale rate proceedings, as evidenced by the fact that this is the third rate increase application which the company has been forced to file since the Plan became effective; but rather its existence has had the effect of confusing the issues involved in such rate proceedings.

"The Plan has thus failed to accomplish its purposes and has shown itself to be unworkable, inequitable and contrary to the public interest.

"Accordingly, the commission is hereby notified that in so far as the existence of the Plan may be deemed to depend on the consent of the company, such consent is, by the filing of this application, withdrawn . . ."

GEORGE C. McCONNAUGHEY, chairman of the Federal Communications Commission appointed by President Eisenhower (TELEPHONY, Oct. 9, p. 17).

So endeth another noble experiment in automatic regulation. Perhaps it was too much to expect of human nature to keep a bargain when it was entirely within the power of one side (the regulatory commission) to change the ground rules whenever it was so disposed. But actually the basic idea of the "Washington plan" was defective. It was an attempt to substitute automatic mathematical computation for selective and intelligent judgment in each case. Over the long run that could be just as bad for the utility company as for its customers.

Telephone Rate Cases

The New York Telephone Co. has been denied a rehearing by the New York Public Service Commission. This was the expected result of the company's petition for a rehearing of the commission's order of last August, unanimously denying the company any part of the rate relief originally sought by the company in the amount of $68,860,000. The way is now open for the telephone company to appeal to the state courts on grounds of alleged confiscation.

In view of the strong case made by the company for a consideration of a current value rate base (as distinguished from the original cost base traditionally followed by the commission), the steps taken by this utility will be followed with interest in all regulatory circles. Meanwhile, the New York Telephone Co. is restudying its revenue situation to determine what action can be taken to obtain additional revenue in view of the company's failure, so far this year, to earn its regular dividend by $2,225,000.

Costs continue to increase at a faster rate than revenues, according to company spokesmen. In denying the original rate petition, the commission ruled that the telephone company's earnings were high enough under present conditions.

The Michigan Bell Telephone Co., already seeking a $22,300,000 rate increase, was recently confronted with a move before the Michigan commission to reduce its existing rates. The commission had agreed with its staff attorney to examine the entire rate structure, including the "reasonableness of existing rates" as well as the company's request for a rate increase. Final action has been slated for later this month. At the demand of the counsel for the city of Detroit, the company's side-line earnings of more than 5 million dollars in directory advertising and private line radio service were put into the record.

Down in North Carolina the state utilities commission is expected any day to make its second ruling on the plea of Southern Bell Telephone & Telegraph Co. for a $3,426,700 rate increase. The company's application was originally filed in June, 1952, and the commission allowed an increase of $1,648,056 in April, 1953. This was appealed to the state courts, which returned it to the commission last January for reconsideration.

The North Carolina Supreme Court said, at that time, that the commission ought to determine what constitutes a fair value of the company's investment in its intrastate business in North Carolina, what would be a fair return on that investment, and how much would be needed to produce the fair return.

The court left the commission three choices: (1) it could let the company keep the $1,648,056 increase; (2) reduce that amount, or (3) if new facts warranted, allow still more. At the start of the new hearings last June, the company indicated its revenue needs had increased. Instead of the $3,426,700 it had previously requested, the telephone company said it wanted to keep the $1,648,056 and add another $4,795,344.

As the hearings were concluding, however, the Bell company said it may need still more. If Southern Bell workers win wage increases, a company witness said, the company would need the $1,648,056 and an increase of $5,139,344. Under the company's interpretation presented during the hearings, the state supreme court's references to

(Please turn to page 40)

THE PLANT MAN'S Notebook

by Ray Blain, Technical Editor

THE *Reader's Digest* for September, 1954, carries an article by Karl Detzer, titled "In Case of Fire" which, in our opinion, should be read by every Independent telephone man. This article states in part as follows:

"Most cities, in this day of telephone and radio, still keep on street corners old red fireboxes that are inflexible and inefficient. This is how they work: Each box is numbered and that number is the only signal it can transmit to the fire department, no matter what the emergency, be it fire, explosion, escaping lethal gas, automobile crash, building collapse, holdup or homicide. A red firebox reports blindly a false alarm, a chimney fire or a holocaust.

"While cities and towns from coast to coast each year string more miles of telegraph wire and set up more boxes, more and more persons when they discover a fire merely pick up the nearest telephone and call the fire department. Today 65 per cent to 98 per cent of all fires are reported by telephone. Typical figures for telephone reports are: Washington, D. C., 70 per cent; Baltimore 73 per cent; San Diego 96 per cent. At Detroit in three weeks early this year 83 per cent of 528 fire calls came by telephone, and of 90 that originated in boxes 41 were false.

"Yet whenever any city for reasons of efficiency tries to abandon the old red boxes, it meets violent opposition from vested interests. Appealing to the public terror of fire, they charge that such action would 'leave the city defenseless' and that officials who permit the boxes to go would be 'guilty of murder' in cases of death by fire. Such charges cause authorities to hesitate before ordering the archaic fireboxes junked.

"Despite this pressure, Miami, Fla., last year decided not to spend hundreds of thousands of dollars rebuilding its shabby box system but to substitute the first modern fire-police alarm devices (TELEPHONY, Aug. 29, 1953, p. 27). These are plainly marked emergency telephones in bright red and green boxes at all busy street intersections. Connecting directly with the city emergency communications room, they are used not only to report fires but to call for police or ambulances.

"These street telephones, in their first 300 days in service, proved their efficiency. Citizens used them four times as often as they did the old boxes to report fires. The police were notified of more than half the city's serious automobile accidents over these telephones. The fire department received only 1/25th as many costly false alarms as were sent from the old red boxes.

". . . . For since the telegraph box can't tell the firemen just what is burning or precisely where, it lacks the efficiency of a telephone. The box merely notifies the department that there is some kind of a fire—if it doesn't happen to be a false alarm—somewhere in the general vicinity of the street corner on which the box stands.

"Naturally, firemen dare take no chances. Prepared for the worst, to every alarm from an old-fashioned box they dispatch enough engines, ladder trucks, rescue squads and chiefs to handle a sizable blaze. Nine times out of 10 the arriving firemen find that one man with a five-gallon pump can or a few squirts from a little booster line can easily put out the fire.

"Miami's new street telephones permit the caller to tell exactly what is burning and precisely where. If the blaze is in a theater at showtime or in a school during class period, all available apparatus is rushed to the scene. But if it's only a burning trash container on a corner, one engine responds. In Miami's first 300 days with the new telephone boxes, only 28 of the 108 fires reported were in buildings. One engine, instead of from four to seven rigs, rolled to each of these outdoor fires. This saved some 1,200 round-trip miles for expensive trucks, reduced wear and tear, prevented serious traffic dislocation, made life safer on the streets.

"Among arguments advanced against the use of the telephone for fire alarms are these: Some people who want to report fires cannot speak English; some become so excited they are inarticulate; some may give incorrect addresses, or the fire department operator may misunderstand a correctly given address. Late at night and on holidays in some industrial districts a passerby who discovers a fire may not be able to find a telephone; if he does find one and it's a pay telephone, he may not have a coin in his pocket.

"The new Miami system overcomes these objections. When anyone lifts a receiver in any Miami fire box, a buzzer sounds in headquarters and a light flashes on the switchboard. That light pinpoints the location of the telephone box. The caller need not know where he is, need not even know what city he's in; the fire department knows on which intersection he is standing. The caller need not speak English; if he merely yells, jiggles or drops the receiver, a police car will be quickly on its way. But if he does speak English and does know where he is, he can give full information, need not wait by the box to direct arriving apparatus as he is supposed to do with the old telegraph system.

"Each Miami telephone box is wired direct to headquarters without passing through a telephone company switchboard. This eliminates danger of disrupted service during an operators' strike. No coin is necessary to operate the telephone.

"The Miami system is operated on a rental basis by the Bell Telephone Co. (Southern Bell Telephone & Telegraph Co.), which supplies the telephones and boxes, the wires, the central office switchboards, maintains them, repairs them, guarantees to keep them constantly in working order. In nearly all cities there are from a dozen to 35 of the old red fireboxes on a single circuit. When one box goes out of order, or the wire breaks, all the boxes on that circuit are out of service. Well-paid city linemen usually are on duty around the clock to go out to make emergency repairs. There being only

one telephone on each Miami circuit, it alone is out of service during repairs."

Although we have no actual personal knowledge of the author of this article, Karl Detzer, he certainly voices our long-standing conviction that the telephone is the best fire-reporting system available. The Department of National Defense has used a telephone fire-reporting system for years without complaint. These systems were used at practically all large military installations during the last war with complete success. Actual fire damage at these stations was negligible.

The National Defense department's fire-reporting telephones are of the weatherproof outdoor type and are installed on pedestals or on the regular power and telephone poles. A red light marks their location at night.

The fire switchboard is of special design. A special relay associated with each line is held operated by a current flow over the line and a special adjustable resistor bridging the telephone set. If the line is opened or grounded on the battery side, this relay releases, lighting a red lamp below the line lamp to indicate that this particular line is in trouble. Other special ringing and power failure alarms are also provided.

A special lamp annunciator is also associated with the line lamp of each line on the system. This annunciator lamp lights with the line lamp but remains lighted after the caller hangs up and the line lamp is extinguished. The annunciator is released manually by operating a switch on the annunciator cabinet. This feature is provided so that should a caller become excited and hang up or should several calls come in at one time none of them will be lost by an excited operator.

This system is so inexpensive to install and maintain that we are firm in our belief that many small cities and towns would do well to investigate its possibilities. Not only will this system provide fire and police protection, but it will likewise prove invaluable for disaster control in any emergency. Independent telephone companies everywhere would render a real service to their city fathers if they would advise the latter of the numerous advantages of such a system.

PLANT MAN'S QUIZ

by RAY BLAIN, Technical Editor

Q. We recently replaced an open wire lead through trees with cable. We did this in order to avoid trimming the trees. Now we are advised that if the trees are not trimmed they may cause trouble on the cable. What is your opinion?

A. We hesitate to advise you in this case since we have not seen the trees. As a rule, however, small limbs will not seriously damage cable even though they come in contact with it. On the other hand, if large limbs are permitted to ride the cable, vibration and swaying may in time result in trouble.

Perhaps you should consider cable guards in certain locations or guy the aerial cable so as to miss the large troublesome limbs.

• • •

Q. Will we be justified in using a push brace on an aerial cable lead in a location where space is not available for guying in the conventional manner?

A. The push brace method may be used, but if the corner in question is in town, then it must be kept in mind that it does not make a very neat job.

We prefer a slack span and guying the first pole from the corner. It is now common practice, also, to dead-end the aerial cable one pole from the corner and then install the one span underground.

• • •

Q. Will it be possible to utilize an oven arrangement so that heat can be used to quickly dry a wet cable after the sheath has been removed?

A. Several years ago an oven arrangement heated with canned fuel was used quite successfully to dry out aerial cable. It was not recommended for use in a manhole due to the hazard of the open flame.

We have also known of an ordinary electric hair dryer being used to good advantage to dry out wet cable.

However, it is believed that desiccant will prove more economical and advantageous for this purpose and it is entirely safe to use.

Q. We have experienced considerable trouble as a result of three-bolt guy clamps slipping when a heavy strain is placed on the messenger strand. Is there any method by which this may be avoided?

A. The clamps should be placed properly and the nuts tightened sufficiently to provide the required holding power.

Tests have proved conclusively that when the nuts of guy clamp bolts are properly greased their holding power is nearly doubled.

When one clamp will not hold the required strain, then two should be installed. Ordinarily, a second clamp will increase the holding power from 40 to 70 per cent.

• • •

Q. In cable splicing, when is it necessary to solder twisted wire connections in the conductors?

A. In general, all twisted wire connections should be soldered when they are in a quadded cable. They should also be soldered in non-quadded cables which may be used as a part of a repeater-operated circuit.

Some engineers also advocate that twisted connections should be soldered when conductors of substantially different sizes are twisted together. When this is done, the smaller wire has a tendency to wrap around the larger so that contact between the two may not prove adequate unless the connection is soldered.

• • •

Q. Will it be possible to obtain an automatic filler so that the proper water level may be maintained at all times on our exchange storage battery?

A. Automatic fillers were extensively used, especially on the pilot cell, back in the days when the open cell storage battery was in common use. While an automatic filler could be installed on the modern, sealed-jar type battery, we seriously doubt if the cost could be justified.

Evaporation in the sealed jar is so slight that the addition of water is required only at extended intervals.

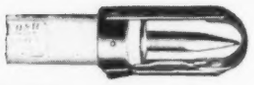
• • •

Q. We would like to know whether it is considered desirable to paint cross-arms?

A. Paint should never be used on cross-arms because it seals the pores in the wood. Moisture that seeps in through weak points in the paint is trapped and cannot evaporate and, therefore, soon causes decay.

Even though the unpainted cross-arm may soak up water in wet weather, it will dry out rapidly and not cause decay.

CONSTRUCTION



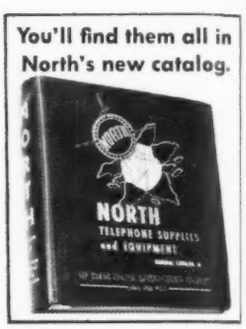
Oshkosh Pike Pole Guards
AP 10

Oshkosh Pike Poles
AP 807

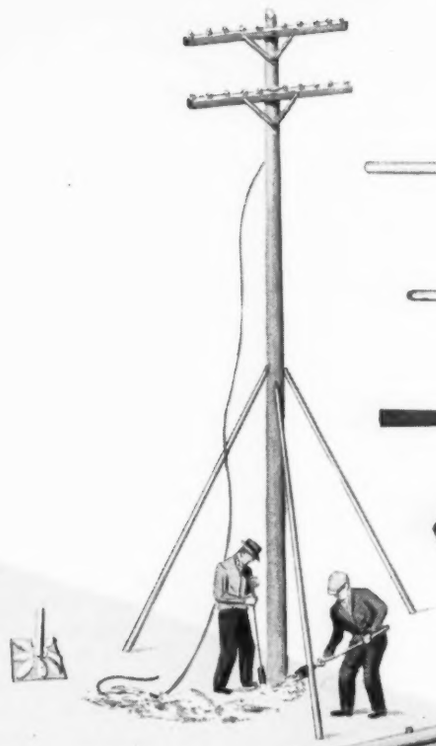
Oshkosh Short Handled Shovels
AS 1090 R

Oshkosh Tamping Bars
AB 852

Oshkosh Straight Shovels
AS 1032

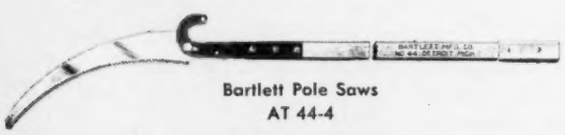


You'll find them all in North's new catalog.



McCabe Powers Pole Dinkey
Model AD 10

Oshkosh
Warning Signs
AE 2

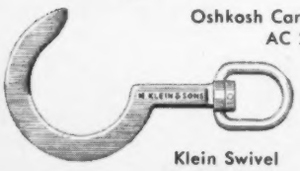


Bartlett Pole Saws
AT 44-4

Oshkosh Carrying Hooks
AC 295

Simplex
Standard
Pole Jacks
AJ 329

Caffing Safety Load Binder
AH A



Klein Swivel
Anchor Hooks
AH 259

Chance Single &
Double Sheave Blocks
AH 2211

Klein Heavy Block Tackles
AH 1802-40

NORTH

TOOLS and EQUIPMENT

A most important part of your construction planning is careful selection and adequate stocking of all the heavy duty tools you'll need.

You can count on North's long established "know-how" to assist you in the proper selection of large tools that will give you the highest return in quality and continued performance.

Oshkosh Spoons AS 1023
McCabe Powers Series #500 Body
Chance Telescoping Trip Augers AD 610
KaMo Pole Hole Digger
Chance Pole Tongs AC 200 T
Oshkosh Diggers AD 2050

THE NORTH ELECTRIC MANUFACTURING COMPANY

601 South Market Street • Galion, Ohio

The OPERATOR'S CORNER

by MAYME WORKMAN, Traffic Editor

THE PROPER handling of equipment has long been recognized as an important function of the traffic department. The student operator in her initial training period is instructed in the correct usage and care of the tools she will use in her work as a switchboard operator, such as cords, plugs, keys, dials, and the headset.

When the student is assigned to a regular operator's trick, any necessary additional instruction or coaching is performed by the supervisor or chief operator. Supervisory employees are invested with the responsibility of seeing that established routines and practices for the conservation and protection of equipment are followed.

In this era of dial conversion, there are still many exchanges where switchboard cords are used and the maintenance of switchboard cords and other equipment used by operators in their work is governed to a great extent by the operator's care and use of this equipment. In exchanges where a special effort is made to develop proper cord handling and use of plugs, a noticeable decrease in the number of cases of trouble reported usually results.

I have often wondered what a switchboard repairman's reaction is when he sees an operator jerk down a cord, drop it on the keyshelf, or push it in with the palm of her hand.

In establishing connections, operators should grasp the plug by the shell. It should not be pushed or shoved in the jack with a finger or palm of the hand. In taking down a connection, the operator should also grasp the plug by the shell and trace the cord to the socket. A plug should never be disconnected by jerking it out by the cord. In addition to the wear and tear on the equipment, the plug might strike an adjacent operator in the eye, causing serious damage.

On long reaches, the operator should signal the adjacent operator to disconnect for her by alternately tightening and slackening the cord. Never, never disconnect a cord for an adjacent operator unless she signals you to do so as this action may result in a cut-off, causing the adjacent operator, as well as the customers who were talking, to get hot under the collar.

To do a satisfactory job, switchboard plugs must be kept clean, free from tarnish, grease, acid and dirt in order to assure good transmission. Dirt on plugs is not always visible to the eye but when a plug begins to become dirty or tarnished it causes a slight scratching noise. This is a warning signal that the plug should be cleaned. If the condition is allowed to continue it will result in transmission loss sufficient to impair the efficiency of the connection.

Plug cleaning periods vary considerably in different areas and during different seasons of the year. For example, in areas where the air is polluted with smoke and dirt of industrial plants and mines, plugs may need cleaning at weekly intervals while in other areas infrequent intervals are sufficient. Cleaning is necessary more frequently during the warmer months of the year than during the colder months.

Dropping plugs on the keyshelf is harmful to the equipment, creates unnecessary noise and, when coming in contact with supervisory signals, chips and mars the opals making them less effective, eventually necessitating their replacement.

The operator's headset is a most important work tool and, when it is not in use, should be wrapped in the prescribed manner and placed in the headset compartment or receptacle provided for it. Headsets should not be thrown on chairs, couches or tables in the rest room. A headset should never be worn or taken out of the central office.

Operators should refrain from swinging or knotting headset cords, dragging plugs or dropping them on the floor. All of these actions have a detrimental effect on the equipment.

Tie strings on the transmitter, receiver and plug should be kept tied to relieve strain on the conductors of the cord wherever it is connected to the terminals, thus reducing the possibilities of cut-outs.

Every operator should have an individual headset and use it at all times except when it is being checked or repaired by the plant department.

The operator's telephone equipment is the medium with which the operator renders quick and satisfactory communication service to telephone customers. It enters into the quality of every call, therefore it is highly important that this equipment be kept in good working condition by proper care on the part of the operating force and routine inspection and maintenance by the plant department.

Defective headsets should be reported by operators as soon as the trouble occurs and should be taken out of service immediately to avoid service difficulties. Some of the common headset troubles are: frayed cords; defective plugs; untied strings; dented transmitter case; defective horn socket; foreign material on the transmitter; loose receiver cap; rusty, bent, dented or reversed receiver diaphragm; broken or damaged receiver cap and loose, missing or defective parts.

The calculagraph is perhaps the most frequently abused equipment in the traffic department. Levers are jerked unnecessarily resulting in additional wear and tear on the equipment. If the calculagraph ribbon is in good condition, by moving the levers gently, back and forth, a clear, legible imprint will result.

Getting back to switchboard plugs reminds me of a little verse I wrote a number of years ago, but which will be new to many operators of today, entitled:

A PLUG'S LAMENT

I am just a little plug,
You use me every day.
Sometimes you treat me kindly,
But other times, well say!

(Please turn to page 40)

STROWGER AUTOMATIC *gives you:*

simplest circuits, simplest maintenance: Your present exchange workers can easily maintain Strowger Automatic because circuits are simple and the switches work in an easy-to-follow sequence. Construction is rugged. Wearing parts are few and easy to replace.

unlimited expansion: You merely add switches, shelves, or complete frames as you grow from a few lines to a multi-office network. Initial equipment and exchange service are not disturbed.

longest life: Some Strowger Automatic exchanges installed 40 years ago are still serving satisfactorily; some have been replaced with more modern Strowger Automatic equipment. BUT: no Strowger Automatic exchange has ever worn out!

unlimited service features: As each new requirement has come, existing Strowger Automatic exchanges have been modified to meet it. Flexible Strowger Automatic is always in step with—and often ahead of—the times!

equipment that can serve all sizes of exchanges: In tiny, unattended community automatic exchanges and in the giant metropolitan exchanges of the world, Strowger Automatic is serving with equal satisfaction to both subscribers and operating companies.

fastest possible local switching: Switches are activated directly by dial pulses. Ringing starts immediately when dial comes to rest after last digit. Nothing could be faster!

equipment that has outlasted many others: Numerous other systems have been tried during Strowger Automatic's long, successful history. Many of them have dropped by the wayside.

equipment that is being produced in ever-increasing quantities by more and more manufacturers: Throughout the world, the trend is clear: more and more manufacturers are allocating more and more of their production capacity to Strowger-type equipment.

low annual cost, most profitable investment: Long equipment life keeps cost-per-year down. Records covering over 50 years of operation prove conclusively that maintenance of Strowger Automatic exchanges, whether handled on a preventive or corrective basis, is economically low.

You'll find Strowger Automatic's capital cost surprisingly low, too! Prove it to yourself. Call your Automatic Electric representative today.

AUTOMATIC ELECTRIC

Originators and Developers of the Strowger Step-by-Step "Director" for Register-Sender-Translator Operation . . . Machine Switching Automatic Dial Systems

Makers of Telephone, Signaling and Communication Apparatus • Electrical Engineers, Designers and Consultants

Distributors in U. S. and Possessions: AUTOMATIC ELECTRIC SALES CORPORATION
Export Distributors: International Automatic Electric Corporation
1033 West Van Buren Street, Chicago 7, U. S. A.

Automatic PBX Trunk Assignments

By G. R. BRACKETT

PBX CENTRAL OFFICE trunk circuits are not only an expensive item of equipment for the telephone company to install, they also are costly to the customer on a rental basis. Too few trunks can be detrimental to service, of course, and cause no end of criticism. Conversely, too many central office trunks are an extravagance which would be hard to vindicate by any method of calculation.

Therefore, good administration and management demand that central office trunk requirements be thoroughly engineered, assignments carefully made and every effort put forth to establish a trunk group which will carry the traffic load and be of most benefit to the customer involved.

There are five objectives that should be kept in mind when making trunk assignments, if effective use of PBX trunk circuits and their associated equipment is to be obtained. They are

(1) To provide an even distribution of traffic over the central office trunk group.

(2) To reduce the hunting time for an idle trunk.

(3) To cut down the possibility of simultaneous seizures and double connections.

(4) To provide a minimum operator's reach.

(5) To avoid cord congestion on switchboard.

All PBX trunk assignments should be based on the trunk requirements and selector grouping arrangement predetermined by detailed engineering studies as to the most efficient trunk layout.

It will be necessary to make trunk assignments for the following types of trunks:

(1) Central office trunks.
  (a) Direct dial.
  (b) Combination.
  (c) Two-way attendant.
  (d) In attendant.
  (e) Out attendant.
(2) Dial selected tie trunks.
(3) Repeating tie trunks.
(4) Manually selected tie trunks.
(5) "O" trunks to attendant.
(6) Miscellaneous trunks — intercepting, interposition, etc.

Assignment of Trunks at PBX Switches

Trunks from Selector Levels to Succeeding Selectors. Trunks from selector levels to succeeding selectors and connectors are cross-connected in accordance with pre-engineered plans. Since these trunks have been based on needs and arrangements determined by an engineering study, they will not need assignment prior to cutover.

Direct Dial Trunks. (1) When there will be less than 10 trunks in the group, they should be assigned to the first choice terminals and the remaining terminals made busy. When there will be more than 10 trunks in the group they should be assigned as engineered and any groups of less than 10 left over should be assigned to first choice terminals, the balance of the terminals being made busy.

(2) If the number of trunks to be assigned are less than the number originally engineered, perhaps because of a change in subscriber's needs, the trunks requirements should be studied carefully to make sure a new subgroup arrangement is not necessary.

Combination Trunks and Related Two-way Attendant Trunks. Combination trunks should be assigned on the ninth selector level *in reverse order to their assignment in the central office.* They should be assigned to jacks at the PBX switchboard in *the same order of assignment as at the central office.* Trunks which are not combination type should be *made first choice at the central office* and *should appear on the high numbered jacks at the PBX switchboard.*

Follows an example of this plan for assignment and the direction of testing. It is assumed 15 trunks are in use, 10 of which are combination and the other five are two-way attendant trunks.

CENTRAL OFFICE ASSIGNMENT

Two-way Attendant	*Combination*
1-2-3-4-5	6-7-8-9-10-11-12-13-14-15

Direction of testing→

PBX SELECTOR ASSIGNMENT
(NINTH LEVEL)

15-14-13-12-11-10-9-8-7-6

Direction of testing→

PBX SWITCHBOARD ASSIGNMENT

Combination	*Two-way Attendant*
6-7-8-9-10-11-12-13-14-15	1-2-3-4-5

←Direction of testing

NOTE: Trunks are arranged at the PBX switchboard in this manner so that trunks can be added to the combination group without it being necessary to rearrange the whole trunk group.

"O" Trunks to PBX Attendant. Operator trunks should be assigned in the same manner as outlined for direct dial trunks.

Tie Trunks. Tie trunks should be assigned in the same order at the PBX switches and switchboard jacks at one end and in the reverse order on the switches and jacks at the other end. When an entire level is engineered for one tie line trunk group and less than ten trunks are installed, they should be assigned to first choice terminals and the remaining terminals made busy.

If two-digit rotary hunting selectors are involved and more than one tie trunk group is assigned to an individual level, the future needs for each group should be considered in order to assure consecutive terminals for necessary growth.

Location of Trunks on Jacks and Lamps at the Switchboard

Usually for the smaller and medium size trunk groups common trunks are used for outgoing and incoming services and a common trunk multiple is used throughout the switchboard. When the trunk groups are large, it is sometimes economical, even desirable, to

provide both outward and inward trunks. In such a case the incoming trunks may be located in a separate multiple and may or may not be multiplied throughout the switchboard.

The central office trunks, attendant trunks and tie trunks should generally be located near the top of the answering space, using the particular arrangement plan best suited for the installation in question. As an example, the following order, starting from the top of the answering jack space and working downward, can be used as a guide for PBX's equipped with a common multiple. It should be understood, however, more than one type of trunk can be assigned to a certain level or to an individual jack strip:

(1) Central office trunks.
(2) Tie trunks. (Dial repeating tie trunks need two jacks)
(3) Trunks to attendant. ("O" Trunks)
(4) Manual extension lines. These lines should be assigned to the bottom strip of the extension multiple, if it is planned to convert them to dial operation at a future date.
(5) Intercepting trunks.
(6) Dial code calling trunks. These trunks are used by attendant to reach the code calling equipment.
(7) Miscellaneous trunks.
(8) Manual conference trunks.
(9) Central office trunks, arranged for night service, should be assigned to jacks which generally are located above the extension multiple and which have been installed for that purpose.

Central Office Trunks

(A) When selecting the panel location for central office trunks, take into consideration the following conditions:

(1) Operator's reach.
(2) Balancing the panel load.
(3) The visibility of trunk signals.
(4) Cord congestion.
(5) On two position non-multiple installations trunks should be alternated between the two center panels, so that each attendant will receive her proportionate load of signals without having too great a reach.

In the case of small groups, some advantage will be had by locating the trunks near the middle of the trunk multiple in order to give the attendant a better view of the lamp signals which might be blanketed by plugs in adjacent jacks. In order to reduce cord congestion, assignment can be made to every other jack, if a surplus of jacks are available.

(B) Combination central office trunks should be assigned to PBX switchboard jacks in *the same order that they are assigned at the central office.* This is the reverse of the trunk order at the PBX switches (ninth level) and assumes *the PBX attendant selects trunks right to left.*

Instruction in all phases of commercial activity, including public relations, overtones of service, general tariff regulations, and the selling of long distance usage, extension telephone and other local equipment, was given to 125 supervisory employes of the Illinois Telephone Co. at a series of two-day training conferences held at Bloomington, Jacksonville and Paris, Ill. Pictured is a group of 40 employes from the Bloomington, Bushnell, Streator, and Pontiac districts in session at a Bloomington hotel. Seated at the table, far right (left to right), are LEON F. ROBERTS, B. C. SCHWEITZER and G. R. ARTHINGTON of the general office staff, who conducted the training conferences.

(C) Two-way central office trunks should be assigned in the same order at the PBX switchboard as at the central office.

(D) Tie trunks should be assigned in the same order at the switchboard jacks and the switches at one end and in the opposite order at the jacks and switches at the other end.

(E) Attendant "O" trunks should be governed by the same general rules used for central office trunks—operator's reach, load balance and cord congestion. Cord congestion can be controlled somewhat by spreading the high calling rate trunks over the jack strip and assigning trunks to every other jack, when spare jacks will allow.

V V

Leased Lines Are Expediting "Internal" Communications

The *Wall Street Journal* for Sept. 27 carried a story by Vinton McVicker which told how certain companies are expediting their "inside" communications by the use of leased lines.

According to Mr. McVicker, two waybill checkers in a Monon Railroad freight office at Hammond, Ind., now do by telephone a job that until a few months ago kept a dozen men traveling about the local freight yards.

When a crew starts loading or unloading a freight car, it plugs a two-way loud-speaker telephone into a nearby wire connection and gets instructions from the office on where each package goes. Formerly a checker had to accompany each of a dozen crews.

A few miles away in Chicago's Loop, reservation offices of nine airlines are connected by a wire circuit that enables any of them to call any other by dialing a single number and typing a message. In 60 seconds a passenger coming into Chicago on one line can be provided with a reservation to continue his trip on another—an impossibility till last year.

These are but two of many current time-saving, labor-saving feats performed by American industry's spreading web of private wires, wrote Mr. McVicker. The hookups are generally for the exclusive use of one company. They're almost always leased from Bell System telephone companies or the Western Union Telegraph Co.

Most of the big setups provide just for written-word communication, via Teletype or similar machine. But a number of Bell System circuits include telephone service. Western Union offers a high-speed facsimile system to transmit messages, maps or other material in "picture" form, exactly duplicating the original copy.

V V

"It has been said that the objectives of education and industry are identical. Both are interested in good citizenship, in serving society, in a better life—and both firmly believe in freedom."—H. L. DONOVAN, *president, University of Kentucky.*

V V

"We fail to recognize that deficit spending in depressions must be made up in good times by paying off the debt."—HERBERT J. MILLER, *executive director, Tax Foundation.*

Regulatory Trends in the State Capitals

By BETHUNE JONES
TELEPHONY Correspondent

PROPOSALS dealing with the regulation of telephone companies and public utilities will be introduced in more than half of the 44 state legislatures scheduled to convene in regular session next year, according to current indications in state capitals throughout the country. The list undoubtedly will be broadened further when the 1955 sessions get under way.

Prospective developments on the basis of information thus far available, on a state-by-state basis, include the following:

ARKANSAS: Legislation to define utility cost items allowable as operating expenses for rate-making purposes may be introduced in the 1955 state legislature.

A resolution proposing a study of public utility rate regulation in other states was recently submitted to the Arkansas Legislative Council by Sen. Max Howell of Little Rock.

Noting that there has been some question as to what cost items should be allowed as operating expenses by the Arkansas Public Service Commission and the courts which review rate decisions on appeal, the study resolution particularly mentioned "the cost of public relations, advertising, gifts and kindred expenses."

Other bills which may be introduced in Arkansas next year include a proposal to require utilities to pay the cost of formal protests to rate increases they seek from the commission. Such a measure was rejected in the 1953 legislature.

COLORADO: Electorate will vote again in November on a proposed state constitutional amendment to bring all privately-owned telephone companies and utilities under the jurisdiction of the Colorado Public Utilities Commission (TELEPHONY, Nov. 15, 1952, p. 38).

Intended to eliminate jurisdictional controversy between municipalities and the state commission over control of telephone company and utility rates, the proposal is similar to one rejected at the 1952 general election. The rejection in that year was attributed by advocates to "a cluttered ballot and confusion."

IDAHO: A move may be revived in Idaho for legislation which would empower the state to produce and transmit electric power and communications. An attempt to put such a proposal on the November ballot as an initiated act failed to obtain sufficient signatures.

The unsuccessful initiative measure, which may reappear next year as a legislative bill, called for establishment of a five-member Idaho Power & Communications Development Commission, which would be authorized to "generate electric energy by water power, fuel, atomic energy, or by any other methods, and construct and operate communications systems; to purchase, exchange or otherwise acquire electric energy and stored and falling water for the purpose of generating electric energy; and to sell such electric energy at wholesale for resale and direct consumption, to municipal bodies, private agencies and persons, and to furnish such electric energy to other agencies of this state."

The proposed commission would be further authorized to construct, operate and maintain multiple purpose hydroelectric projects, and to acquire the property of privately-owned electric and communication companies "by purchase, condemnation or otherwise." It would be authorized to issue bonds within the limits of the state constitution to finance its undertakings.

IOWA: A proposal for the creation of a new state public service commission to regulate Iowa utilities and telephone companies may be revived in the 1955 state legislative session.

Such a measure failed of enactment last year after it had been proposed by an interim study committee.

MARYLAND: Likely to be brought up again in the 1955 Maryland legislature is a previously unsuccessful proposal that would base rates for public utilities on original investments.

The Maryland Public Service Commission now considers cost of replacing plants and equipment in determining "fair value" of transit, power and communications companies. Rates are limited to base returns on about 6 per cent of the value thus determined.

MASSACHUSETTS: A proposal backed by the state CIO and AFL to place consumer representatives on the state public utilities commission will be brought up again at the 1955 state legislative session despite failures at past sessions.

Another previously unsuccessful proposal which may be revived calls for appointment of a $10,000-a-year "people's counsel" to represent the public in utility rate cases.

MICHIGAN: Proposals unsuccessfully advocated this year by Governor Williams, but which may be revived at the 1955 state legislative session, call for the enactment of legislation to: Empower the Michigan Public Service Commission to consider the quality of service in fixing telephone rates; amend state insurance and banking laws to encourage investment by financial institutions in Independent telephone companies; and permit the creation of telephone authorities by subscribers of any exchange.

Such proposed telephone authorities would be empowered to acquire property by purchase or condemnation and to issue securities to private or public investment sources for buying, operating and maintaining adequate telephone facilities.

MISSISSIPPI: A five-point program designed to strengthen the Mississippi Public Service Commission was recently submitted to Governor White by Commission Chairman Alton Massey, who requested that it be submitted to the state legislature for consideration.

The proposals were not referred to a Mississippi special legislative session which convened on Sept. 7, but may be taken up by one or more future special sessions expected to be called prior to the next regular session in 1956.

Stressing that the recommendations were his own and not necessarily those of the other two commissioners, Massey called for additional experts, pay for public witnesses, authority to execute own orders, investigators for tariff violations, and advance permission for removal of passenger train service.

Massey requested that the legislature provide an engineer, accountant, investigator, legal counsel and assistants for the commission.

Pay for public witnesses: Though the commission is authorized to pay witnesses, "there is no appropriation of money available to pay the mileage or per diem."

Authority to execute own orders: Under state law, the commission's orders may be appealed to the Mississippi Supreme Court. If it is affirmed and the utility refuses to comply, the commission may appeal to the state supreme court.

If that is affirmed, "it is assumed that the utility must execute the order of the commission; however, the law does not specifically so state."

The double appeal to the supreme court results in unjust and undue delay to the party entitled to the benefit of the commission's order.

Investigator for tariff violations: Such violations result in unfair and illegal competition against intrastate carriers. "The only solution . . . is proper facilities in the way of investigators with the authority to enforce the laws."

MONTANA: Expected to be revived in Montana next year is a previously unsuccessful legislative proposal to replace the present Montana Board of Railroad Commissioners with a new state public service commission, whose members would be appointed rather than elected.

NEBRASKA: Killed in the Nebraska legislature last year, but likely to be revived at the 1955 session, is a proposed state constitutional amendment providing for the creation of a new state public utilities commission, composed of appointed members, to replace the present elected Nebraska Railway Commission.

NEVADA: Likely to be proposed again in the Nebraska legislature, although turned down last year, is a proposal to permit telephone companies and utilities to put rate increases into effect in advance of state public service commission approval, by filing a bond to cover possible subsequent consumer refunds.

NEW JERSEY: A revision of New Jersey's public utility statutes, being drafted by a special state legislative commission, is scheduled to come up for action next year. A year's extension for completion of the revision study was granted by the 1954 legislature.

Measures previously proposed unsuccessfully in the New Jersey legislature which may be brought up again at the 1955 session include a proposal to add two members to the present three-man state public utilities commission. Under a previously rejected bill, one of the two new commissioners would be named to represent labor interests and the other, the viewpoint of consumers.

" AND HERE'S AN ADDED FEATURE. NO MORE BURNT MEALS WHILE YOU'RE ON THE TELEPHONE. "

NEW MEXICO: A state legislative interim study committee on telephone companies and public utilities has approved for submission to the 1955 New Mexico legislature a proposed state constitutional amendment which would empower the legislature to provide for regulation of telephone companies and public utilities and, if it so decided, to create a new single commission to administer such regulation.

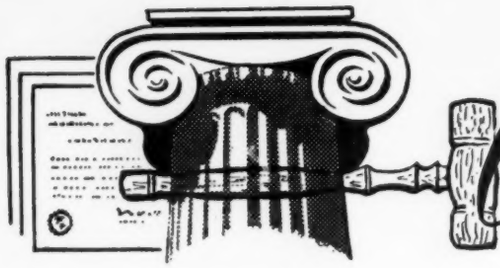
New Mexico's constitution and statutes now place authority for regulating utilities within two administrative agencies. The elective state corporation commission, set up by the state constitution, now regulates transportation and communication utilities, while the appointive state public service commission deals with power, gas and water utilities. The latter was created by a 1941 legislative act.

NORTH CAROLINA: A previously unsuccessful legislative proposal which may be revived at the 1955 session would establish the base used in determining telephone company and public utility rates as the original cost of property less allowances for depreciation or obsolescence. This would replace the procedure of basing rates on the reproduction cost of a company's property.

Another North Carolina proposal, turned down in the past, would require telephone companies and utilities to give their customers advance notice of hearings on rate increase applications.

NORTH DAKOTA: Speedier decisions by the North Dakota Public Service Commission may again be sought at the 1955 state legislative session.

(Please turn to page 42)



Courts and Commissions

New Ruling Broadens Powers Of Nebraska Commission

A ruling by the Nebraska attorney general's office on Sept. 28 held that the state railway commission has authority to regulate rates of rural electric membership associations.

Written by Assistant State Attorney General Homer G. Hamilton, the opinion pointed out, however, that the rates of public power districts, rural power districts and electric cooperative associations appear to be exempt from railway commission jurisdiction.

As a result of the ruling, the commission said it would look into the case of four Arthur County ranchers whose electricity was cut off during a rate dispute with the Panhandle Rural Electric Membership Association of Alliance. One of the ranchers, Robert L. Sizer of Flats, wrote to ask the commission to enter the case.

Commission Chairman Joseph J. Brown said the agency never before had been given a ruling on its authority to regulate the rates charged by rural electric membership associations. At least for the present, he said, the commission would inquire only into the specific complaint before it, and would not seek to assert jurisdiction over all rural electric membership associations, of which there are several in the state.

Mr. Sizer told the commission that the Panhandle REMA cut off his electricity when he refused to pay higher rates than he had agreed to in a five-year contract with the association.

V V

North Carolina Company to Sell 10,000 Shares of Common Stock

The Durham Telephone Co. was authorized by the North Carolina Utilities Commission on Oct. 7 to sell 10,000 shares of additional common stock at $50 per share (TELEPHONY, Sept. 4, p. 31).

Money raised from the stock sale is to be used to redeem the company's 6,240 shares of 5 per cent cumulative preferred stock, and the company then plans to issue 16,000 shares of 5½ per cent cumulative preferred stock at $25 per share and to convert its present 3,300 shares of 5½ per cent cumulative preferred stock with a par value of $50 per share into 6,600 shares with a par value of $25.

The commission, in approving the company's plans, said the proposals will help finance improvements and expansion.

V V

General Company Authorized Two Rate Increases in Texas

General Telephone Co. of the Southwest, San Angelo, Tex., has been granted two rate increases in Texas during the month of September. They are as follows:

Exchange	*Old*	*New*
Clarksville:		
Common battery, 1,343 stations; effective Oct. 16 (TELEPHONY, Oct. 9, p. 46).		
One-party business	$8.50	$10.00
Two-party business	6.75	8.00
One-party residence	4.25	5.00
Two-party residence	3.50	4.00
Four-party residence	2.75	3.25
Memphis:		
Common battery, effective Sept. 16.		
One-party business	7.75	9.50
Two-party business	6.25	8.00
One-party residence	4.50	5.50
Two-party residence	3.75	4.50
Four-party residence	3.00	3.50

At the end of September, General Telephone Co. of the Southwest had 26 cases representing an annual increase of $689,000 filed with cities in Texas and a case filed with the Arkansas Public Service Commission representing an annual increase of $302,000. This is a total of 27 cases on file, representing increases of $991,000 annually. For the first nine months of 1954, the company completed 35 rate cases totaling an annual increase in revenue of $359,000.

V V

Commission Approves Purchase By New York Independent

The New York Public Service Commission on Oct. 5 authorized Port Byron Telephone Co. to purchase all assets of Savannah Telephone Co.

The Savannah company serves about 383 stations through a magneto exchange. Port Byron Telephone Co. serves 805 stations through automatic exchanges in Port Byron and four other communities in Cayuga County.

The purchasing company proposes to retain the Savannah system as a separate unit for the time being but has included in its long-range improvement program plans to convert the Savannah exchange to dial operation.

In a report to the commission, Examiner Morris A. Goldfarb stated the purchase price reflects the Savannah company's plant investment less accrued depreciation.

V V

Nebraska Company's New Rates Permit 5.24% Return

The Nebraska Railway Commission authorized the Gurley Telephone Co. to increase rates for certain classes of service, effective Oct. 1. Old and new rates are as follows:

	Old	*New*
One-party business	$4.25	$5.25
Combination business and residence	——	8.75
Two-party business	——	3.75
Rural business	3.50	4.25
One-party residence	2.75	3.75
Two-party residence	2.50	3.50
Four-party residence	2.00	3.25
Eight-party residence	——	2.50
Rural	2.75	3.50
Switched service	1.00	1.00

The company does not employ a prompt-payment discount plan.

Under the proposed rates the company's annual revenue is estimated to be $11,005. Expenses exclusive of $1,320 in taxes are estimated at $7,739. This will result in a 5.24 per cent return on an adjusted net book rate base of $37,132.

Dial service is furnished throughout the exchange, which serves 154 customers.

The company is relatively new, organized in 1948. A large majority of the users are stockholders, and officers of the company have been donating their time toward maintaining the telephone plant and equipment. It was reported that the company now expects to support the services of a paid management and employ a new maintenance man.

British Columbia Company Markets Bond, Stock Issue

Two new securities issues of North-West Telephone Co., Vancouver, B. C., Canada, were offered publicly the week of Oct. 4 by W. C. Pitfield & Co., and totaled 1.5 million dollars.

They include $750,000 of 4½ per cent 20-year first mortgage bonds series C, offered at $100 and accrued interest; and $750,000 of 5 per cent cumulative redeemable $10 par preferred stock, offered at $10 per share flat.

Of the proceeds, about $950,000 will be used to repay accounts payable. Balance will go toward extensions and improvements of plant and equipment in connection with the company's expansion program, and for general corporate purposes.

North-West, whose common stock is all owned by Anglo-Canadian Telephone Co., had 7,192 telephones in service at July 31, 1954, against 2,386 at the end of 1946.

V V

Nebraska Independent Gains Authority to Increase Rates

Authority to increase rates was granted the Coleridge Telephone Co. by the Nebraska Railway Commission on Sept. 22 (TELEPHONY, Oct. 9, p. 50). The company was also authorized to discontinue its prompt-payment discount plan. Old and new rates are as follows:

	Old	*New*
One-party business (Mag.)*	$3.25	$3.75
One-party business (C.B.)*	4.00	4.50
One-party residence (Mag.)*	2.25	2.75
One-party residence (Mag.)†	2.00	2.75
One-party residence (C.B.)*	3.00	3.25
Five-party residence (Mag.)*	2.00	2.25
Five-party residence (Mag.)†	1.75	2.25
Rural (Mag.)*	2.25	2.50
Rural (Mag.)†	2.00	2.50

*Company-owned
†Subscriber-owned

Operating revenues under the new rates are estimated to be $19,298 and expenses $18,502, exclusive of $473 in taxes. This will result in a net return per year of 1.14 per cent upon an adjusted net book rate base of $28,354.

The company asked for increased rates because of higher salaries it is required to pay to plant and traffic personnel to retain competent people. It serves 466 customers with a combination of magneto and common battery type service. All lines are metallic.

V V

OK New York Company Raise

The Pattersonville Telephone Co., Rotterdam Junction, received a New York Public Service Commission grant of higher rates to net about $2,200 a year, it was reported on Oct. 5. The company serves approximately 600 subscribers.

V V

SW States Granted Increase At Texas Exchange

Increased rates for the 472 Lewisville, Tex., stations of the Southwestern States Telephone Co., Brownwood, were approved recently by the Lewisville City Council.

Old and new rates are as follows:

One-party residence	$3.50	$4.25
Two-party residence	2.75	3.25
Four-party residence	2.25	2.50
One-party business	5.25	7.00
Two-party business	4.25	5.25

V V

Iowa Independent Sold To Central Company

Sale of the Fort Dodge (Iowa) Telephone Co. to Central Telephone Co., Chicago, Ill., was completed in Fort Dodge on Sept. 29.

A total of 4,266 shares of common stock of the Fort Dodge company on Sept. 29 had been turned over to Fort Dodge National and Fort Dodge State banks, which had held payment money in escrow for the Chicago company. Only 3,877 shares were necessary to complete the transaction.

The Central company agreed to pay a stipulated price for the common stock provided 65 per cent or more was offered for sale.

The Central company's operating headquarters are at Lincoln, Neb.

V V

Telephone Plays Important Role In British Cancer Fight

An unusual "telephone plan" which, it is hoped, will add at least an estimated 20,000 people to the 25,000 cured of cancer in Britain each year will become effective in England in October.

Dr. Malcolm Donaldson, of the British Empire Cancer Campaign, is launching the new scheme—by which people with symptoms which make them uneasy can ring a special number and obtain advice.

The service will be available to people all over the United Kingdom and will operate every night between 8 p.m. and 11 p.m. People wishing to take advantage of the scheme will simply pay the usual evening telephone rates.

Those who telephone this special number will hear recorded talks on the symptoms of different forms of cancer, and will be advised to seek early medical attention if they feel they have these symptoms.

The scheme has by no means received the full or unqualified approval of the medical profession in Britain. Several leading physicians and surgeons have expressed fear that it might start a national cancer phobia.

V V

Another Home Burns Because of Refusal to Yield Party Line

Because of a "busy" party telephone line and a lack of water, flames gutted a two-story frame house near Monroe, N. J., recently. The owner estimated damage at $7,000.

The owner's sister, who lives next door, told firemen that her telephone call for help was delayed "at least five minutes" when another subscriber on her party line failed to heed her emergency pleas.

The owner, his wife and eight children were shopping at the time. The blaze is believed to have started in a defective oil burner.

V V

Indiana Company Asks to Issue 36,000 Shares of Common Stock

The Home Telephone & Telegraph Co., Ft. Wayne, recently petitioned the Indiana Public Service Commission for authority to sell to present stockholders 36,000 shares of common stock. The stock will be sold at $20 a share and the revenue will be used for additional working capital.

Subscribers in Adams, Allen, Dekalb, Huntington, Noble, Whitley and Lagrange counties are served by the company.

Home T&T expects to spend 6 million dollars on an improvement program in the next three years.

V V

Purchases Indiana Independent

General Telephone Co. of Indiana, Inc., Lafayette, has signed a contract to purchase the assets of the Bristol Telephone Co. serving approximately 500 subscribers in Bristol, Ind. Announcement was made on Oct. 7 in New York by General Telephone Corp.

LEFT PHOTO: Shaking hands across the historic monument at Wendover, Utah, which now commemorates the nation's first coast-to-coast telephone line, are (left to right): PAUL S. GARWOOD, general manager of Bell Telephone Co. of Nevada, and ERIC C. AABERG, Utah general manager of the Mountain States Telephone & Telegraph Co. The bronze plaque standing beside US Highway 40, one of America's busiest transcontinental routes, carries this inscription: "On June 17, 1914, the first transcontinental telephone line was completed at this point on the border of Nevada and Utah. Construction forces of the Bell Telephone Co. of Nevada and the Mountain States Telephone & Telegraph Co. met here, making the last splices in the wires which joined East and West in voice communication for the first time." RIGHT PHOTO: An actual photograph of linemen from the two companies as they made the last splices before telephone company officials and townspeople on June 17, 1914.

Monument in Utah Marks First Cross-Country Telephone Line

A "first" in America's communications history was commemorated recently when the officials of two Bell System companies dedicated a marker on the site of the "golden splice," in Wendover, Utah.

The concrete and bronze monument marks the site where the pioneer transcontinental telephone line was completed 40 years ago. It pays tribute to the construction men of the Bell Telephone Co. of Nevada and the Mountain States Telephone & Telegraph Co., who built the sections of the first transcontinental telephone line that crossed Nevada and Utah.

Present at the 1954 observance was a man who played a leading role in the golden splice ceremony on June 17, 1914. He is Ralph Knudsen, still an active telephone employe with Pacific Telephone at Berkeley, Cal. Mr. Knudsen represented the West in making the last splice at Wendover 40 years ago.

Participating in the long distance anniversary observance were Paul S. Garwood, general manager, Bell Telephone Co. of Nevada and Eric C. Aaberg, Utah general manager of the Mountain States company. Representatives of Nevada and Utah historical groups were present, as were Wendover city officials - and telephone officials from Tooele, Utah, and Ely, Nev.

Unable to attend, Gov. Charles H. Russell of Nevada wired his regrets, and speaking of the first transcontinental's completion said, "That event signalized the welding more closely of all the segments of our great nation, and its effect upon the economy of the states of Nevada and Utah as well as the nation cannot be overestimated. The economic growth and prosperity of our great country and its welfare in peace and war are closely allied with and dependent upon communications such as that furnished by the telephone companies of the United States."

The transcontinental line's completion was a major telephone engineering and construction achievement. The four copper wires, strung 3,400 miles from New York to San Francisco, provided the nation its first coast-to-coast voice communication.

Forty years of telephone progress have produced big changes in cross-country calling. The first New York-San Francisco calls cost $20.70 for three minutes and took an hour to complete. When the service opened for public use in 1915 there were only about two calls a day.

A three-minute call between New York and San Francisco today costs $2.50, plus tax. Now calls are completed in less than a minute, and more than 40,000 are handled during an average business day from Pacific Coast cities to eastern points.

FBI Asks for Cooperation in Printing of Telephone Number

Telephone companies have heretofore been asked to print the telephone number of the nearest Federal Bureau of Investigation office in a prominent place in their telephone directories.

The government agency has now asked that telephone companies print the initials "FBI" in parentheses immediately following the words "Federal Bureau of Investigation."

Thus the notation would read: "Federal Bureau of Investigation (F-B-I)—Telephone _____."

V V

Name Plant Superintendent Of Two Missouri Companies

J. O. Milligan, plant superintendent, Pennsylvania Community Telephone Co., Bangor, recently became plant superintendent for the Middle States Utilities Co. of Missouri and the Andrew County Mutual Telephone Co., both of Cameron, Mo.

Mr. Milligan will be located at Cameron.

V V

"The key to future economic advance and to the maintenance of employment, production, and income is capital formation."—HARLEY L. LUTZ, *tax consultant, National Association of Manufacturers.*

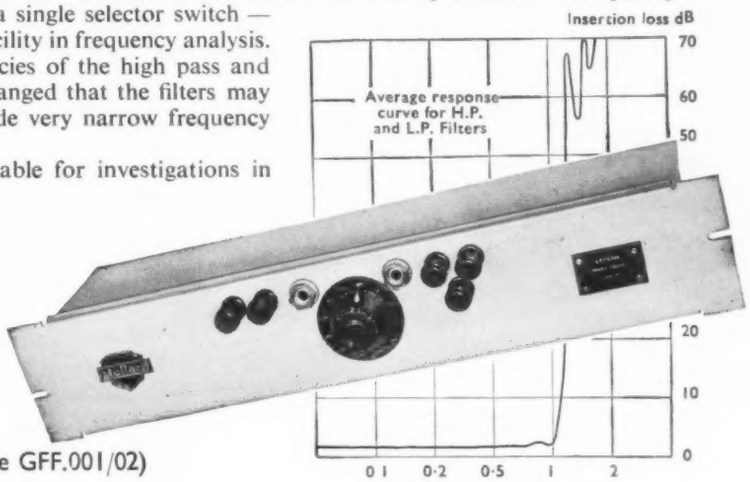
Improved high and low pass filters

TEN CUT-OFF FREQUENCIES IN ONE COMPACT PANEL

THESE Mullard variable cut-off filters, originally developed in conjunction with the British Post Office, represent a marked advance in filter technique. New design features together with the use of Ferroxcube pot cores have resulted in a valuable reduction in panel size, as well as high attenuation characteristics outside the passbands. Frequency ranges are controlled by a single selector switch — an especially important facility in frequency analysis.

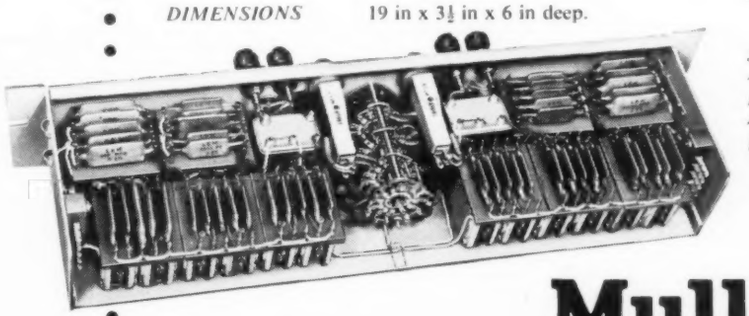
The ten cut-off frequencies of the high pass and low pass filters are so arranged that the filters may be used in pairs to provide very narrow frequency samples.

These filters are invaluable for investigations in communications work where it is necessary to limit frequencies, as for example in the measurement of filter attenuation and amplifier distortion.



High-Pass Filters (Type GFF.001/02)

CUT-OFF FREQUENCIES (fc)	440, 660, 990, 1480, 2222, 3333, 5000, 7500, 11250, 16800 c/s selected by 10-way switch
IMPEDANCES	Input and output 600 ohms, balanced or unbalanced
STOPBAND ATTENUATION	At 0.8 x fc — 50 dB At 0.6 x fc — 60 dB
PASSBAND ATTENUATION	3dB ± 1 dB from 1.1 x fc to 20 or 25 kc/s depending on cut-off frequency (fc)
DIMENSIONS	19 in x 3½ in x 6 in deep.



Low-Pass Filters (Type GFF.001/01)

CUT-OFF FREQUENCIES (fc)	400, 600, 900, 1350, 2025, 3040, 4500, 6830, 10250, 15400 c/s selected by 10-way switch
IMPEDANCES	Input and output 600 ohms, balanced or unbalanced
STOPBAND ATTENUATION	At 1.25 x fc — 50 dB At 1.35 x fc — 60 dB
PASSBAND ATTENUATION	2dB ± 1dB from 50 c/s to 0.9 x fc
DIMENSIONS	19 in x 3½ in x 6 in deep

Mullard

SPECIALISED ELECTRONIC EQUIPMENT

MULLARD LTD., EQUIPMENT DIVISION, CENTURY HOUSE, SHAFTESBURY AVENUE, LONDON, W.C.2
ENGLAND

(MI433)

REA Approves $4,904,000 for Loans in Five States

REA's largest outstanding loan to improve and extend rural telephone service was approved for a Florida company, and four others were approved in Kansas, North Carolina, Georgia and Minnesota, the U. S. Department of Agriculture announced on Oct. 6. Details of the loans follow:

The S & T Telephone Cooperative Association, Goodland, Kan., on Sept. 27 was allocated $444,000 to improve and extend rural telephone service in Sherman, Thomas, Rawlins and Wallace counties in Kansas, and Kit Carson county, Colorado.

As a basis for the new system, the recently formed cooperative is planning the following acquisitions: Levant Rawlins County Telephone Co., Levant, Kan.; Kanorado Telephone Co. and the Kanorado and Farmers Telephone Association, both of Kanorado, Kan.; the Green Valley Telephone Association in Colorado; and the Farmers Telephone Cooperative Association, Brewster, Kan. These facilities are now providing magneto service to 398 subscribers and 112 switchers over 381 miles of line.

The REA loan funds will be used mainly to improve service for the existing subscribers and provide facilities to serve 151 rural families now without telephones. New automatic central office equipment will replace the magneto switchboards at Levant, Kanorado and Brewster, 110 miles of new line will be added, and 307 miles of the existing line rebuilt. The 112 switchers will all become regular subscribers of the S & T Telephone cooperative as soon as service is available. The completed system will consist of 456 miles of line and three exchange areas.

Carl A. Denton is president of the S & T association.

* * *

Yadkin Valley Telephone Membership Corp., Yadkinville, N. C. was allocated $40,000, fourth loan to this borrower. This loan will be used to finance the acquisition, rehabilitation and integration of the East Bend Telephone Co. at East Bend, N. C. in to the Yadkin Valley system. The 73 existing subscribers, plus 51 new subscribers in the East Bend area, will receive service from the proposed Forbush dial central office of the Yadkin System.

The four loans to this borrower, totaling $1,685,000, will make it possible for the Yadkin Valley cooperative to serve a total of 3,319 subscribers in Iredell, Yadkin and Davie counties. Dial central offices will be located at: Harmony, Newhope, Forbush, Brooks, Crossroads and Smiths Grove. The Harmony and Smiths Grove exchanges have been cut over to dial operation and more than 700 subscribers are receiving dial service in these communities.

James M. Parks is president, and Dwight Williamson is manager of the Yadkin Valley cooperative.

* * *

Utelwico, Inc., Talbotton, Ga., on Sept. 29 received a loan of $223,000 to improve and extend existing rural telephone service in Talbot county. With the REA loan, the prospective borrower plans to convert the existing system, serving 245 rural subscribers over 42 miles of line, to dial operation, and add facilities to serve 186 new subscribers. About 36 miles of line will be rebuilt and 97 miles of new line added. The company will construct a combination headquarters and dial central office building at Talbotton. The expanded and improved system will consist of 133 miles of line.

Mr. T. J. Battle is president and manager of the Utelwico system.

* * *

Crow Wing Cooperative Rural Telephone Co., Brainerd, Minn., also received on Sept. 29, $595,000, second loan to this borrower. These loan funds, together with the first loan of $352,000 approved in May 1953, will be used to improve and extend rural telephone service in Morrison, Crow Wing and Cass counties.

The borrower plans a modern telephone system to serve a total of 1,456 subscribers and 46 switchers in north central Minnesota. The funds will enable the borrower to practically double the operating area of the system as originally planned. Over 70 per cent of the total loan funds will be used for facilities to serve rural families now without telephones.

The following acquisitions will constitute the nucleus of the Crow Wing system: Motley Telephone Co. at Motley; Pillager Telephone Co. at Pillager; Freedham Rural Telephone Co. at Freedham; Leigh-Richardson Telephone Co. at Hillman; Pulaski Telephone Co. near Brainerd; and 11 switchers companies. These facilities are now serving 527 rural subscribers on 257 miles of line.

The borrower proposes to rebuild about 230 miles of the existing line, and construct 432 miles of new line. Automatic central offices will be located at Sullivan, Freedham, Motley, Pillager and in the rural areas near Nokay Lake and Mission.

These changes and improvements will enable the Crow Wing cooperative to furnish improved service to the existing subscribers, and initial service to 929 families now without telephones. There will be service without toll charge between some of the borrowers' exchange areas. The completed system will consist of 663 miles of line.

Edwin O. Swanson is president and Joseph Zumwalt is manager of the Crow Wing cooperative.

* * *

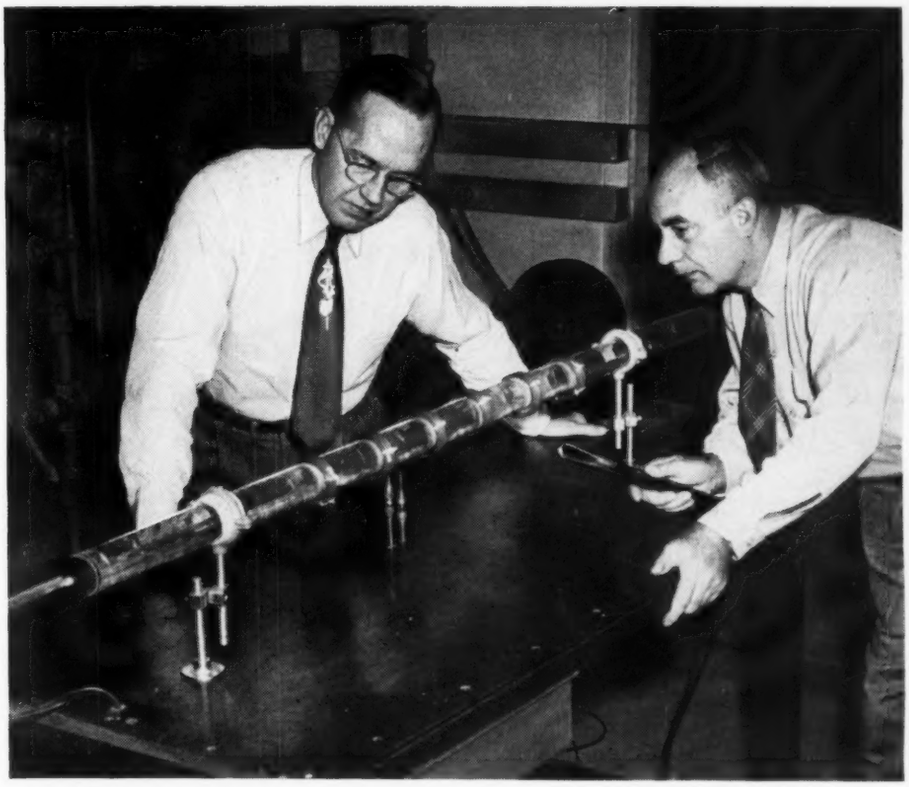
North Florida Telephone Co., Live Oak, Fla., on Sept. 30 received $3,602,000 to finance the extension and improvement of rural telephone service in ten counties of northeastern Florida. It is the largest telephone loan on REA books.

The borrower—a new commercial company—is planning a modern telephone system to serve 7,278 subscribers, including 4,096 now without service, over 1,840 miles of line.

The company will use its own funds, plus loan money from REA to acquire from the Florida Telephone Corporation seven magneto, one common battery and two dial exchanges which serve 3,182 subscribers over 449 miles of line.

The REA loan will be used to improve and convert these facilities to full dial operation, add 1,407 miles of

(Please turn to page 46)



Zone Refining apparatus, showing tube and induction-heating coils. For transistors—tiny electronic amplifiers—germanium is made extremely pure. Then special impurities are added in controlled amounts for best transistor performance.

1 part in 10,000,000,000

To make the most of their revolutionary invention, the transistor, Bell Laboratories scientists needed ultra-pure germanium.

The scientists solved their problem by devising a radically new refining process. The germanium it yields may well be the purest commercially produced material on earth.

It has only *one part in ten billion* of impurities harmful to transistor performance. That's about the same as a pinch of salt in 35 freight cars of sugar.

Yet the new process, Zone Refining, is simple in principle. An ingot of germanium is drawn through a series of induction-heating coils that melt narrow zones of the substance. Since impurities are more soluble in the liquid than in the solid form of a metal, the molten zones collect impurities. They are swept along by the successive melts to the end of the ingot, which is finally cut off.

Zone Refining is also being applied to the ultra-purification of other materials useful to telephony. This single achievement of research at Bell Telephone Laboratories clears the way for many advances in America's telephone system.

BELL TELEPHONE LABORATORIES

IMPROVING AMERICA'S TELEPHONE SERVICE PROVIDES CAREERS
FOR CREATIVE MEN IN SCIENTIFIC AND TECHNICAL FIELDS

IN THE NATION'S CAPITAL

Concluded from page 21

fair value and fair return meant a "fair value" rate base of $92,808,462 and 6.75 per cent return.

Progress of the REA Program

Already noted in this department last week was President Eisenhower's spirited defense of the REA program under Administrator Ancher Nelsen—an Eisenhower appointee. Among other things, the President pointed out that 75 million dollars in loans has been made for rural telephones during the past fiscal year, which was more than double the dollar amount made in the previous fiscal year.

Without mentioning REA's critics by name, it was easy to see that the administration has in mind the sniping at Nelsen's regime by the National Rural Electric Co-operative Association (NRECA). The President, in a letter to Nelsen, merely said that certain people were very busy trying to spread the wrong information about the administration's policy on the REA program and the progress being made. Other administration spokesmen were not so reticent about naming NRECA. Chairman Miller (R., Neb.) of the House Interior Affairs Committee, called the NRECA a "hard core of Socialists" and he expressed his belief that it had become a partisan organization, dedicated to smearing the Republican administration.

NRECA President Jack Smith said this was not so. He said there were still Republican and Democratic members in the NRECA and that it was neither partisan nor socialistic. But then he went on to throw some more bricks at REA's record since Nelsen took over. Secretary of Agriculture Benson took up the counterattack against REA's critics, referring to the fact that the nation's farms are now over 92 per cent electrified as compared with only 90 per cent when the Eisenhower administration took over.

In this connection, it might be interesting to note that the present administration in REA is not so adamant or exclusive about its ideas of what constitutes a farm and thus what percentage of farms are served. In Connecticut, for example, REA now agrees that the farms in the Nutmeg state are 99.9 per cent electrified instead of 94.4 per cent a year ago. This seems to be an acceptance of the figures on the subject put out by the Connecticut Public Utilities Commission.

At least as far back as 1951, the Connecticut commission claimed that farms of that state were 99.9 per cent electrified, but REA, in those years, refused to accept the figure, quibbling over definitions about what constitutes a farm, etc. This policy of accepting state statistics may become an important part of the rural telephone picture in the future—even more so than in the field of electrification, considering the fact that the electrification job seems to be pretty well finished.

V V

General Telephone Corp. Makes Changes in Officer's Functions

The substantial growth of General Telephone Co. during the past several years has resulted in a necessary reallocation of the secretary and treasurer's functions in their New York offices, the company announced on Oct. 7.

Accordingly, Robert F. Briggs, currently holding the offices of both secretary and treasurer, will continue to hold the title of secretary, and will also continue as office manager, but has resigned as treasurer. Ralph D. Heusel, a vice president, has been elected vice president and treasurer. No change is anticipated in present assignments or responsibility.

Mr. Briggs and Mr. Heusel will continue to carry out their assignments under the direction of Thomas A. Boyd, senior vice president.

V V

Nebraska Pioneers Hold Picnic

More than 100 persons were on hand for the picnic held at Columbus, Neb., on Sept. 26 by the Frank H. Woods Chapter of the Independent Telephone Pioneer Association. Members and their families from towns throughout the state attended.

Speakers included A. B. Gorman of Lincoln, chapter president, and Earle Blomeyer of Columbus, president of the Nebraska Continental Telephone Co.

Activities included golf for the men, bingo for the ladies and special entertainment for the children.

Lewis Johnson of Columbus and Claude Helm of Lincoln were chairmen for the event.

V V

Kansas Co-Op Buys Exchange

The Craw-Kan Telephone Cooperative, Girard, Kan., recently took over the active operation of the Beulah Telephone Co., incorporating it into the Girard and Cherokee exchanges (TELEPHONY, Mar. 27, p. 30).

OPERATOR'S CORNER

Concluded from page 26

You jerk me by the cord
And let me slide and fall,
Until my wires are broken,
And I'm no good at all.

My tip is bent, my shell is loose,
I'm in an awful plight!
The supervisor comes along
And puts me out of sight.
She slips a black cap on my head,
And there I have to sit,
Until the plant man comes along,
To fix me up a bit.

I want to serve you every day;
Morning, noon and night.
But I can't do this, don't you see,
Unless you treat me right.
So when you're tempted to jerk me
And insert me with a shove,
Stop and think a minute of—
The "Lament of a Plug."

Traffic Questions

(1) After passing a call to the terminating toll center or dialing the called number, if the calling party is not holding the line, when should the operator ring the calling telephone?

(2) In giving a report of delay should the operator express regret at being unable to complete the call if this is the case?

(3) Whenever a report is given requiring further attempts, what action should be taken by the operator before releasing the calling party?

(4) On reports of "U definite time," if word is left, when should the operator try the call?

If word is not left on reports of "U definite time," when should the operator try the call?

(5) If the called telephone mentions two times at which the called party is expected, such as, "two or three o'clock," and word has not been left on the call, which time should the operator use in determining the subsequent attempt time?

Answers are presented on page 42.

V V

"There's no denying that the money from Washington comes in handy for the state agencies and subdivisions of government facing ever-increasing demands for service and improvements. The fact remains, however, that eventually all of the money for government functions comes from the taxpayers. There's no magical factor in government financing. No agency of government has access to funds other than those which are paid by or levied against the credit of the American public."—INTERNATIONAL FALLS (MINN.) DAILY JOURNAL.

"Practically every type of business is using your P-A-B-X equipment."

MANKATO CITIZENS TELEPHONE CO. MANKATO MINN.

INCORPORATED 1898
Offices 315 South Second Street
MANKATO, MINNESOTA
TEL. 4495

August 4, 1954

Mr. H. C. Ryon
Sales Promotion Manager
Automatic Electric Sales Corporation
1033 West Van Buren St.
Chicago 7, Illinois

Dear Sir:

Since 1947 this company has installed almost $100,000 worth of PABX equipment. The equipment ranges from your Type 32A with 6 stations and 2 trunks to the 150-line Type 50 we installed in our new $3,000,000 hospital last year. The users of your PABX equipment would read like a Who's Who of our Chamber of Commerce. Practically every type of business activity is using some type of your equipment.

Needless to say, the extra revenue produced by this equipment is very welcome and we make every effort to sell PABX's at every opportunity. Usually an on-the-job survey is made of the customer's requirements and we then draw up a proposal giving the benefits to be derived from this type of equipment. Evidently our subscribers have been fully satisfied because we have never removed any PABX equipment for any reason than to replace it with a larger system.

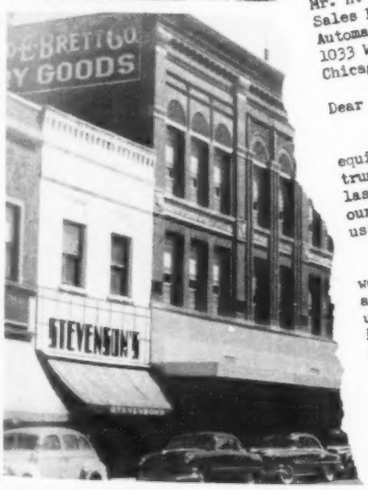
It is indeed gratifying that each type of Automatic Electric Company's PABX equipment has lived up to our promises to the subscriber. All our subscribers are satisfied with the service rendered by this equipment and our maintenance costs are extremely low.

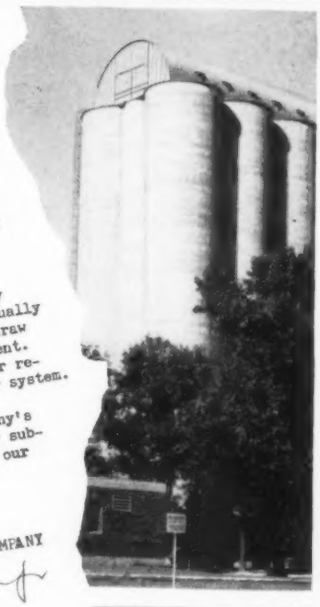
Yours very truly,

MANKATO CITIZENS TELEPHONE COMPANY

O. M. Ferguson

Assistant Manager & Engineer





Follow the lead of this successful telephone man—start selling P-A-B-X in *your* area too! Send for our HELPFUL NEW P-A-B-X SALES KIT and *quick delivery* schedules on stock P-A-B-X switchboards.

AUTOMATIC ELECTRIC

Originators and Developers of the Strowger Step-by-Step "Director" for Register-Sender-Translator Operation . . . Machine Switching Automatic Dial Systems

Makers of Telephone, Signaling and Communication Apparatus • Electrical Engineers, Designers and Consultants

Distributors in U. S. and Possessions: AUTOMATIC ELECTRIC SALES CORPORATION
Export Distributors: International Automatic Electric Corporation
1033 West Van Buren Street, Chicago 7, U. S. A.

REGULATORY TRENDS

Concluded from page 33

A measure of this type turned down by the 1953 legislature would have required the state public service commission to make decisions within 90 days on all matters submitted to it.

OHIO: Proposed legislation to eliminate the use of "reproduction costs new, less depreciation" in determination of valuations in Ohio telephone company and public utility rate cases and replace it with a formula providing for a reasonable return upon the "fair value" of the property of the telephone company or utility, as determined by reproduction cost new, original cost and other factors, has been favored by Chairman Robert L. Moulton of the Ohio Public Utilities Commission at hearings conducted by the State Legislative Service Commission's public utilities committee.

Such legislation was unsuccessfully introduced in the 1953 legislature under sponsorship of Governor Lausche, who contends the state's present rate base procedure for gas, electric and telephone companies tends to discourage modernization. The interim committee, which is studying the issue at the request of the 1953 legislature, has not yet indicated what recommendations it will submit to the 1955 session.

Moulton's support of the proposed change was at variance with views previously expressed before the study group by the Ohio Public Utilities Commission's other two members, Ray O. Martin and Ralph Winter. They had both contended that changing of the existing rate procedure would result in "chaos" and probably higher rates to consumers.

Under questioning by Ohio House Speaker William Saxbe, who heads the interim study, Moulton disagreed with his two commission colleagues. He declared that changing to the "fair value" formula would prove tremendously important to cities in combatting rate increases.

Although conceding that the new "fair value" formula would tend to give the commission broader discretionary powers than it now enjoys, Moulton declared that "the courts would stop any abuse of discretion." He said application of the formula in other states has pretty well established what commissioners can and cannot do.

Moulton also urged creation of a post of public defender to protect the public from so-called "rate gouging." He said such a public defender should have the right to say whether or not a rate case should be appealed.

OREGON: Proposals for an elective rather than appointive state public utilities commissioner may be revived at the 1955 state legislative session. An unsuccessful effort was made to put such a proposal on the general election ballot this year as an initiated measure.

PENNSYLVANIA: Bills previously turned down in the Pennsylvania legislature which may be brought up again next year include a proposal to define the "fair value" of a telephone company or a utility's holdings in rate cases as original cost, less accrued depreciation.

Other proposals would permit appeals to the courts from all orders of the Pennsylvania Public Utility Commission in rate cases; require telephone companies and utilities to give notice to municipalities receiving service before seeking a rate change; and require the commission to hold hearings on all voluntary rate increases and require issuance of refund script in cases where the increase goes into effect pending further hearings.

RHODE ISLAND: A new move may be made in the Rhode Island legislature next year for the enactment of legislation to compel utility companies to pay 45 per cent of the cost of operating the Rhode Island Public Utilities Division.

After having advocated such legislation, Governor Roberts earlier this year vetoed a bill of this type because it had been amended against his wishes to strip the director of the state department of business regulation of any control over telephone companies and public utilities, and place full regulatory powers in an administrator within the executive department.

The governor said the amendment would do violence to the state's administrative setup and represented "a stand against stringent utility regulation." The state public utilities administrator now operates as a subordinate of the director of the state department of business regulation.

TENNESSEE: A bill is expected to be introduced in the 1955 state legislature, with the backing of the Tennessee County Highway Officials Association, to empower county governing bodies to charge telephone and other public utility companies for use of county road rights of way.

TEXAS: A proposal turned down by the 1953 Texas legislature which may be brought up again next year would create a new three-member, elected Texas Public Utility Commission with statewide regulatory and rate-making powers over electric, telephone and natural gas companies.

VERMONT: A previously unsuccessful proposal for election rather than gubernatorial appointment of members of the state public service commission may be revived in the Vermont legislature next year.

WISCONSIN: Proposals turned down by the 1953 Wisconsin legislature, but which may be brought up again next year, include a bill to replace the present Wisconsin Public Service Commission with a new five-member agency with one member to represent each of the following: farmers, small business, labor, industry and the public.

Answers to Questions On Page 40

(1) The operator should ring the calling telephone as soon as she ascertains that ringing has started at the called telephone.

(2) Yes, this action should be taken whenever it is appropriate to do so.

(3) The operator should make certain that the customer has a clear understanding of the next action to be taken, by whom, and at what time, insofar as possible.

(4) The operator should try the call 20 minutes after the expected time in order to give the called party an opportunity to report.

If word has not been left on the call, the operator tries it at the expected time.

(5) The operator uses the earlier time if word has not been left on the call.

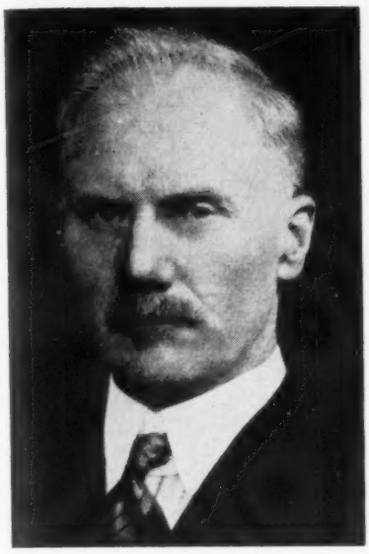
V V

OBITUARY

CHARLES J. ERICKSON, 84, of Lake Zurich, Ill., died on Sept. 28.

Mr. Erickson was the last survivor of the original Strowger development staff, which included the Erickson brothers, Charles and John, A. E. Keith, T. G. Martin, and E. A. Mellinger.

In 1893, Mr. Erickson and his brother John joined the Strowger Automatic Telephone Exchange. Throughout his career with the Strowger company and later with Automatic Electric, he was engaged in mechanical and electrical design of Strowger switches, until he retired in 1932. In 1938 he was selected to receive the fifth Talbot G. Martin Award. He had a total of 30 patents to his credit and participated in developing the piano wire switch of 1894, the dial type calling device, the automatic selection of an idle trunk, the basic form of the



C. J. ERICKSON

present Strowger two-motion switch, and certain vital parts for the first paystation.

Mrs. Hazel Runkel, a daughter, and Roy, a son, survive him.

V V

BOOK REVIEW

"FORMULAS FOR COMPUTING CAPACITANCE AND INDUCTANCE," by Chester Snow, National Bureau of Standards Circular 544, 37 figures, 69 pages, 40 cents. (Order from the Government Printing Office, Washington 25, D. C.).

This collection of formulas contains some that are commonly used in electrical work and some that have been specially developed for precision work at the Bureau of Standards. Explicit formulas are given for the computation of:

(1) The capacitance between conductors having a great variety of geometrical configurations.

(2) The inductance, both self- and mutual, of circuits of various shapes.

(3) The electrodynamic forces acting between coils when carrying current.

Formulas for skin effect and proximity effect in concentric cables and parallel wires are included. The formulas for the simpler configurations are given in terms of the elementary functions, whereas more complex shapes involve the use of Legendre polynominals, Legendre functions, and elliptic functions.

One section is devoted to a discussion of the relation between the Legendre and the elliptic functions.

(*Note:* Foreign remittances must be in U. S. exchange and should include an additional one-third of the publication price to cover mailing costs.)

TELO-CATER*

Patent No. 2142304-Pat. pending *Reg. U. S. Trade Mark

1. **Locates shorts, crosses, grounds and opens in cable, drops and aerial wire without necessity of climbing poles.**
2. **Cuts trouble shooting time and gas mileage.**
3. **Identifies pairs in cable.**
4. **Locates buried conduit, water and gas pipes.**
5. **Locates concealed wiring between walls in building.**

How the TELO-CATER works:

You attach your cable tone to your troubled line either in the office or in the field with your line tapper; then you follow the tone with the TELO-CATER until the tone either stops completely or greatly diminishes. This is where your trouble is and it can be located within an inch. You can locate most troubles in open aerial wire without leaving your car. Ordinarily if the trouble is in cable you will have to extend your exploring core closer to the cable than you would in either drop wire or open aerial wire.

Trouble in drops

Trouble in drops may be easily and quickly located by listening for the tone at each drop to see if the tone has gone by or stopped there. If the tone is heard in the drop and enters the house you know the trouble is inside the house. You simply follow the tone until it stops or greatly diminishes, that is where your trouble is located. The TELO-CATER can be used with most regular tone generators.

Simple design

The TELO-CATER unit consists of a vacuum tube amplifier contained in a metal cabinet finished with a baked slate gray crackle enamel finish. Two exploring coils, one mounted with a short length of composition tubing for a handle, the other fitted with a ferrule to fit a 1¼" standard tree trimmer extension section with 20 feet of shielded cable for plugging into the amplifier unit and a line tapper also adapted to fit the 1¼" tree trimmer extension section.

Complete TELO-CATER unit and attachments

Maintenance and repair

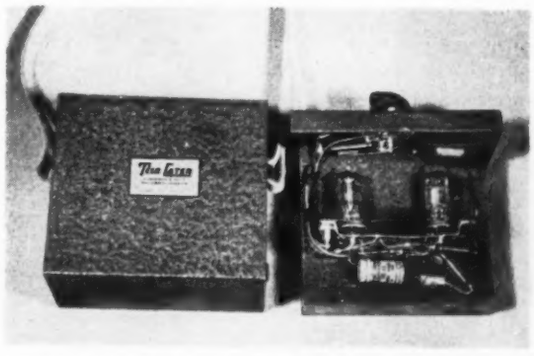
The TELO-CATER very seldom gives any trouble, but if trouble develops the unit should be returned to the factory. It will be repaired for a nominal fee and returned in ten days.

Order direct

All TELO-CATER units are sold with strictest satisfaction guarantee. All orders are shipped direct from the factory. Write or phone for prices and delivery schedule.

CUMMINGS & NOTT

Philomath, Oregon



TELO-CATER unit open to show simplicity of design. Pilot light indicates when the set is on.

SHORT ROUTE CARRIER

Concluded from page 19

ters, and common equipment used in the system, each additional circuit we add should cost less than half that figure. For example, channel 8, which we probably will want to add within the next year, will cost us only $115 per circuit mile because we will need to purchase only the channel unit for each terminal and plug it in.

Small Independent companies that have not yet had the need—or perhaps the inclination — to try carrier may raise the question: "But what happens if trouble develops in your system?" And they may say with alarm: "Why, you have no carrier engineers."

Well, in the first place, we don't think there is any reason to expect much trouble with the equipment. A tube may need replacement occasionally, and there may need to be minor adjustments. Our plant engineers can handle routine maintenance such as that.

Carrier manufacturers and magazines such as TELEPHONY are printing more and more material that helps plant engineers learn about carrier—what it is, what it does, and how it does it.

[**EDITOR'S NOTE:** *Recently* TELEPHONY *published a series of nine articles on the principles of carrier systems. These articles will be reprinted under one cover and will be available at a small cost.*]

There is no reason for our company to believe that it needs a carrier specialist. If we should encounter trouble that is beyond the ability of our men to fix, we can always call for advice from the people who provided the equipment. And I'm sure we could get assistance, if needed, from larger Independents in this area who have carrier specialists on their staffs.

So, it is our company's opinion that we have nothing to fear in carrier; it may have vacuum tubes, but that doesn't make it something mysterious. Rather, we feel that we should look to carrier as something to help us. For it provides telephone companies, both small and large, a new tool. Even over short routes, carrier is proving that it often can expand toll circuits more easily, more efficiently, and more economically than any other means.

V V

Number of British Telephones Has Doubled Since War

The two-millionth telephone has been installed in London, the Post-Office Department reported. (In Great Britain, the country's telephone system is administered by the government Post Office Department.) Of the 6 million telephones operating in Britain, half have been installed since the war.

Fifty-one new telephone exchanges, including 24 conversions from manual to automatic, have been opened in London in the last nine years. Ninety-two of every 100 telephone calls are made now through automatic exchanges.

In the next 12 months, 14 more exchanges are planned for the capital.

V V

Priests in Germany to Advise And Console by Telephone

Germans whose troubles stack up too high can now reach for a telephone and get religious comfort, says a UP dispatch.

A gray-haired Jesuit priest started the service in Nuremberg. It will be offered soon in other German communities by members of his Roman Catholic order, he said.

This type of service was reported in operation in the United States a year or so ago.

The 51-year-old priest gets an average of 20 telephone calls a night from persons who are despondent or confused and who want spiritual advice.

"Some of them are in real trouble," he said, "and I do all I can to give them comfort. There are others whose burdens are not quite so heavy, but who need someone to talk to."

A young German telephoned that he was unable to get work and was contemplating suicide.

"I talked to him a long time and pleaded with him not to give up hope," the priest said. "Two days later the young man called back and said that he had got a job and was happy.

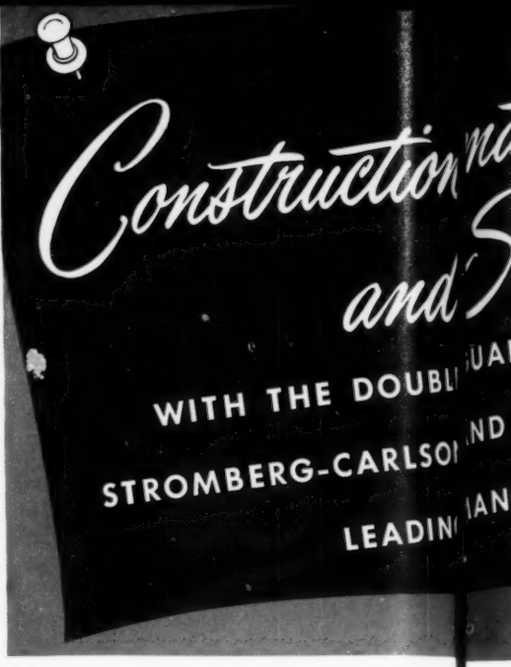
"Sometimes the callers give their names, and sometimes they do not.

"Once in a while, when a person is in really serious trouble, I invite him to come to see me personally. But most cases are handled by telephone.

"Of course I can't hear confessions over the telephone, nor do other things that only a church can do. But we try to help as much as possible."

V V

"We're trying to get government out of business, every way possible. We have quite a number of industry council's, and one of the things we keep asking these businessmen is this: 'Where is government competing with you?' Then, when we get an answer, we try to do something about it."— SECRETARY OF COMMERCE WEEKS.



gould planté . . .

the aristocrat of stationary batteries

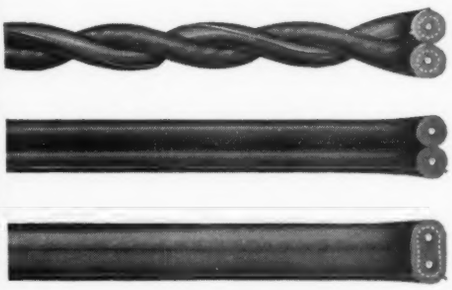
Many Planté batteries are still in active float service after twenty, thirty, even forty years! That's because Planté plates are heavy, solid sheets of pure lead. In these batteries Gould has eliminated the primary cause of self-discharge, capacity losses and shortened battery life. Cut maintenance, charging and replacement costs to a minimum. Choose Planté.

Made by
GOULD-NATIONAL BATTERIES IN

materials
Supplies
UARANTEE OF
ND AMERICA'S
ANUFACTURERS

PHELPS DODGE TELEPHONE DROP WIRE

ALL TYPES—FOR HEAVY-DUTY SERVICE



✔ **Copperweld conductors** for strength

✔ **Habirshaw insulation** for reliability

✔ **Neoprene sheath** for high resistance to abrasion and weathering

PHELPS DODGE COPPER PRODUCTS CORPORATION

individual station protector

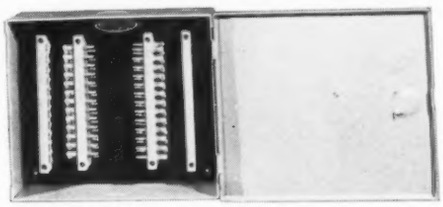
reliable 955A

MFD. BY RELIABLE ELECTRIC COMPANY

- One-piece Design
- Simplified Mounting
- Asbestos Mats Eliminated

The very simplicity of the Reliable 955A is assurance of long, trouble-free service. Fuses are mounted on a one-piece, low absorption porcelain, well spaced for convenient connecting. Reliable Self-cleaning Sawtooth Discharge Blocks are standard, dissipating static without time lag or danger of grounding the line. The 955A uses No. 77L, seven ampere ceramic fuses.

"Reliable Identifies the Quality"



cook type "57" interior terminal box

The type 57 interior terminal box is for distribution and termination of lead-covered or loom cable for low-voltage circuits. The box itself which has an Underwriters' Laboratory listing is constructed of smoothly enameled steel, with hinged cover and necessary knock-outs. Fanning strips and terminal strips are provided as well as screw connectors on the drop sides and solder clips for cable wires.

Distributed by

STROMBERG-CARLSON

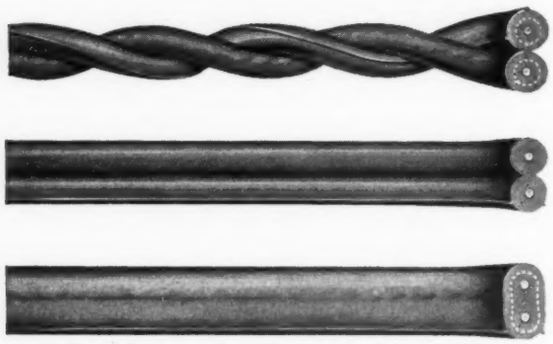
ROCHESTER • CHICAGO • ATLANTA • KANSAS CITY • SAN FRANCISCO • TORONTO

High Fidelity Radios and Radio-Phonographs | Office Intercom Equipment | Electronic Carillons for Churches and Public Buildings | Sound and Public Address Systems | "Panoramic Vision" Television Receivers

AND MANY OTHER ELECTRONIC PRODUCTS FOR OUR ARMED FORCES

PHELPS DODGE TELEPHONE DROP WIRE

ALL TYPES—FOR HEAVY DUTY SERVICE



✓ **Copperweld conductors** for strength.

✓ **Habirshaw insulation** for reliability.

✓ **Neoprene sheath** for high resistance to abrasion and weathering.

* * *

A complete line of telephone wire distributed exclusively by Stromberg-Carlson

PHELPS DODGE COPPER PRODUCTS CORPORATION — P D — WIRE TO MARKET — REG. U. S. PAT. OFF.

PHELPS DODGE COPPER PRODUCTS CORPORATION

40 WALL STREET, NEW YORK 5, N. Y.

REA ALLOCATIONS

Concluded from page 38

new line and integrate 332 miles of the existing line into the new system. About 100 miles of line will be rebuilt, and three dial central offices and other facilities added to furnish new and improved service in the operating territory. This will include the following counties: Alachua, Columbia, Hamilton, Lafayette, Putnam, St. Johns, Suwannee, Union, Gilchrist and Bradford.

There will be 13 automatic offices, located at: Crescent City, Hastings, High Springs, Jasper, Lake Butler, Mayo, White Springs, Alachua, Branford, Ft. White, Jennings, Live Oak and Wellborn. The Live Oak exchange will provide toll service for six of the other exchange areas. Service without toll charge will be available between some of the central offices. Otto Wettstein, III, is president of the North Florida company.

V V

General of Indiana Appoints Industrial Relations Head

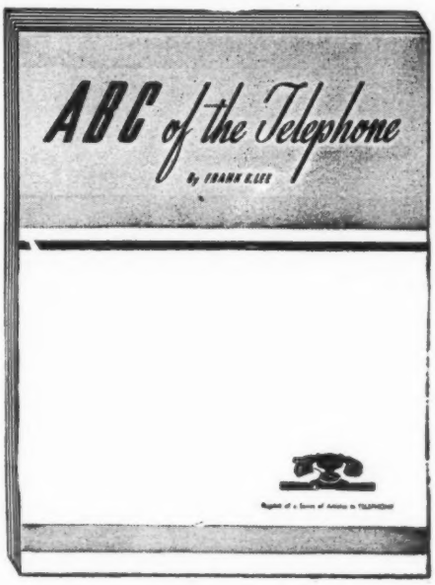
H. E. Hussey, president of General Telephone Co. of Indiana, Inc., Lafayette, has announced the appointment of James L. Malone as director of industrial relations. Mr. Malone will assume

J. L. MALONE

the responsibility for labor relations and personnel administration, which functions were previously under the jurisdiction of H. G. Counsman, secretary-treasurer of the company.

Mr. Malone, a graduate of Boston College, has been continuously employed in personnel work since 1946. Prior to the acceptance of his present position, Mr. Malone served as assistant person-

Here are the books to help you with your plant training problems.



Do as hundreds of other telephone companies do—give each plant man copies of Vol. I and Vol. II of "ABC OF THE TELEPHONE."

In the ABC books technical telephone subjects are discussed in the language of the plant man.

New men learn the business faster after studying the ABC books.

Experienced men gain a new appreciation and knowledge of their job.

That's the way the ABC books have helped solve plant training problems for many Independent and Bell System companies.

CHECK THESE TIMELY ABC SUBJECTS:

VOLUME I—84 PAGES.
Circuits, transmitters, receivers, induction coils, generators, ringers, relays, line protection, dials, automatic switching, principles of protection, drop wire installations.

VOLUME II—80 PAGES.
Protectors, station installation, fault locating, circuit analysis, planned maintenance program, electronic testing of outside plant, loading coil theory, etc.

CHECK THESE REASONABLE ABC PRICES:

Single copies	$1.50 ea.
2- 25 copies	1.35 ea.
26- 50 copies	1.20 ea.
51- 500 copies	1.05 ea.
501-1000 copies	0.95 ea.

Take advantage of quantity prices by combining your requirements for each volume.

CHECK YOUR REQUIREMENTS—
Use this convenient order blank or send your purchase order to:

FRANK E. LEE, *Publisher*
1751—183rd St., Homewood, Illinois
Please send:
_____ Copy(ies) ABC OF THE TELEPHONE—VOLUME I
_____ Copy(ies) ABC OF THE TELEPHONE—VOLUME II
NAME_____
STREET_____
CITY AND STATE_____

The ABC books can be used as a textbook for a preliminary, semi-technical telephone training course in your local high school or college.

KENNECOTT CABLE IS CHECKED IN EVERY DETAIL

✓ Step by step Kennecott Telephone Cable is carefully tested so that the finished product is certain to be reliable, long-lasting and time-resistant.

Every bit of copper wire, insulating tape and sheathing must go through a quality-control program in order to qualify for use in high-grade Kennecott Cable.

Remember the name Kennecott whenever you need cable. Call your local Chase sales office for full information.

CHASE BRASS & COPPER CO.
Waterbury 20, Conn.

DISTRIBUTOR FOR
KENNECOTT WIRE & CABLE CO.
Subsidiaries of Kennecott Copper Corporation

CHASE WAREHOUSES and OFFICES:

Albany†	Chicago	Denver†	Kansas City, Mo.	New York	San Francisco
Atlanta	Cincinnati	Detroit	Los Angeles	Philadelphia	Seattle
Baltimore	Cleveland	Houston	Milwaukee	Pittsburgh	Waterbury
Boston	Dallas	Indianapolis	Minneapolis	Providence	
			Newark	Rochester†	(†sales office only)
			New Orleans	St. Louis	

Type S-1-A
Frequency Modulated
Subscriber Carrier

We are as proud of this tag

As we are of our carrier!

NOW SHIPPING!
$1180. per Channel

McELROY
MANUFACTURING CORP.
Littleton, Massachusetts, U.S.A.

nel director of Supplee-Wills-Jones Milk Co., a division of National Dairy Products Co., and as personnel director of Snellenburgs, Inc., in Philadelphia, Pa.

Mr. Malone served four years in the Marine Corps during World War II and rose from private to the rank of captain. He is at present a major in the Marine Corps Reserve.

Mr. Hussey stated that the appointment of Mr. Malone was occasioned by the expansion and growth of the company, which has brought about a need for a redistribution of staff assignments.

V V

Kellogg Announces Two Appointments

O. C. Bailey, assistant sales manager, Kellogg Switchboard & Supply Co., has announced the appointments of C. E. Brown as central division manager with headquarters in Mansfield, O., and C. F. Cheney to succeed Mr. Brown as Chicago division manager.

Mr. Brown's first post with Kellogg was in 1919 with the Kansas City branch. Later he served as division manager of the company's branches in Kansas City, Mo.; San Francisco, Cal., and Columbus, O. In 1944, he was appointed supply sales manager in Chicago and in 1952 was made Chicago division manager, a position he has held until his present appointment. In his new post, Mr. Brown will be in charge of the company's selling and warehousing operations in Ohio, West Virginia, and portions of Michigan, Pennsylvania and Maryland.

C. E. BROWN

C. F. CHENEY

Mr. Cheney has been central division manager in Mansfield, O., since 1953. Before joining Kellogg in 1949, he spent three years in the Long Lines Department, American Telephone & Telegraph Co. and three years with the Wisconsin Telephone Co., in engineering. He is a graduate of the University of Wisconsin and has a Bachelor's Degree in electrical engineering. Mr. Cheney will direct the company's selling and warehousing operations in Illinois, portions of Wisconsin, Michigan and Indiana.

V V

"Given a favorable political climate, the private enterprise system will meet every challenge." — Virginia (Minn.) *Mesabi Daily News.*

Seal Out Trouble...
For Keeps
with KEARNEY AIRSEAL

MOISTURE, CORROSION AND OXIDATION

are permanently sealed out of every connection that is protected by this easy-to-use, hand-moulded compound. Even on underground applications, the high dielectric strength and chemical stability of KEARNEY AIRSEAL give ageless, tight-sealing protection and insulation.

WRITE FOR SAMPLES AND PRICES

JAMES R. KEARNEY CORPORATION
4224-42 Clayton Avenue • St. Louis 10, Missouri
216

JAMES R. KEARNEY CORPORATION ST. LOUIS, MO. GUELPH, ONT.

For Better Construction *SAFER* Maintenance

Cut replacements . . . reduce operating costs with Ray-O-Vac telephone dry cells!

Rely on the Ray-O-Vac Telephone cell for superior telephone performance. Ray-O-Vac has perfected a specially compounded mix for telephone service which means lower cost per hour of tele- phone service. Available in either screw or clip terminals.

Ray-O-Vac LEAK PROOF Brand Flashlight batteries are fully **sealed in steel!** Only these flashlight batteries are fully sealed in steel... top, bottom, and sides. This all-around steel casing makes Ray-O-Vac flashlight batteries keep their power longer. Ray-O-Vac LEAK PROOF Brand is guaranteed against corroding your flashlights.

Ray-O-Vac Company, Madison 10, Wisconsin
Ray-O-Vac Canada Ltd., Winnipeg, Manitoba

Careful planning saves money and damning

—

Proper engineering in advance of construction — pays off — not only in original cost but more so — thru out the life of the instrumentality installed!

—

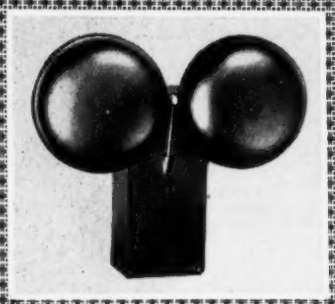
We are prepared to help you, plan your present and future —

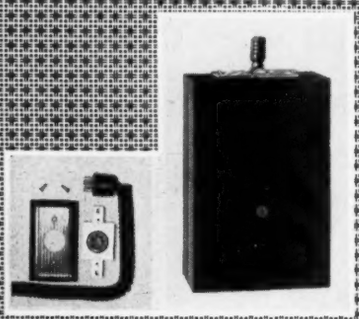
GUSTAV HIRSCH ORGANIZATION, INC.

1347 WEST 5TH AVENUE
COLUMBUS 12, OHIO

Telephone: HUdson 8-0611

Suttle Prices Make These Profitable Revenue Producers





It seems there is no end to the opportunities for selling extension services of one kind or another. These popular-priced accessories guarantee profitable extra revenues.

Suttle Loud Ringers

All-metal, heavy duty ringers with 6-inch gongs that really "ring the bell" with patrons who have problems "hearing the telephone."

Extension Switching Keys

The poor man's PBX. Have countless uses in stores, garages, warehouses—any location that needs one or two extension telephones. Once in service, they never come out.

Wall-Plug Extension Sets

The most popular fad the telephone business has ever experienced. Yet it serves people's idea of luxury. One way or another, it results in extra revenues.

See Your SUTTLE Catalog

Serving Independent Telephone Men Since 1910

Suttle EQUIPMENT CO.

LAWRENCEVILLE ILLINOIS

Graybar Appoints District Operating Managers

According to an announcement made by W. E. Henges, Graybar president, the following appointments have been made:

H. D. Epps, appointed district operating manager at Pittsburgh. Mr. Epps started with Graybar in 1930 as a bookkeeper at Atlanta. He was named operating manager at Miami in August, 1944. Receiving the title of district supervisor of training, he was at Jacksonville from July, 1949, until March, 1953, at which time he returned to his former position at Miami. He served in that capacity until his present appointment. A native of Griffin, Ga., Mr. Epps attended Georgia Institute of Technology.

C. A. Rettenmayer, appointed district operating manager at Minneapolis, replacing A. C. Wehman, who is retiring. Mr. Rettenmayer started as a selector at Dallas in July, 1925. He has served the company in Dallas, Houston, Fort Worth, San Antonio and St. Louis. A native of Loup City, Neb., Mr. Rettenmayer is a graduate of the University of Nebraska with a B.S. degree.

F. P. Hoeffler, appointed district operating manager at St. Louis. Mr. Hoeffler has been with the company since Sept., 1919, recently celebrating his 35th anniversary. His career has been spent at Graybar offices in Cleveland, Toledo, Akron and Pittsburgh, and in the New York executive offices. While in New York he served as assistant to E. W. Cashman, vice president.

V V

Man thinks, and at once becomes the master of beings that do not think. —BUFFON.

EXPERIENCED CONSTRUCTION GANG AND CABLE MEN AVAILABLE for Missouri · Kansas · Oklahoma · Texas

We specialize in Construction Work, Installing, Pole Line, Open Wiring, Aerial Cable, Underground Cable, Splicing Cable, Main Frame, Telephones Rebuilt, Hole Digging, Drafting and Engineering.

HAMS' CONSTRUCTION COMPANY
UNION, MISSOURI

W. T. KING — P. E.
TELEPHONE CONSULTANT
Engineering, Accounting, Valuations, Traffic, Depreciation Studies, Rates and General Management Services
306 So. Capitol, P. O. Box 216 — Lansing, Mich. Telephone 5-1034

Installation Specialists
CENTRAL OFFICES
INSTALLED—MODIFIED—ENLARGED
COMMUNI-CATERING
P.O. BOX 6712 CHICAGO 7, ILL.

ROBERT E. FOLEY CONSTRUCTION CORP.
DESIGN—SURVEYS—APPRAISALS—Construction and Maintenance of Overhead and Underground Telephone Plant. Complete supply of poles available for emergency requirements.
48 GRISWOLD STREET
BINGHAMTON, N. Y. TEL. 2-7215

What You Want When You Want It
Immediate Shipment from Nearest Warehouse Points
TELEPHONE & POWER SUPPLY, INC.
TOPEKA, KANSAS PHONE 4-8788

Construction Crews — Station Installers
Central Office Installations
Cable Splicers — Complete Engineering
HENKELS & McCOY
1418 Baldwin Bldg. Erie, Pa.
Now Operating in 20 States

CABLE SPLICING
A SERVICE THAT SATISFIES
Construction & Maintenance for all Telephone Cables
J. O. MORTON CO.
CABLE SPLICING CONTRACTOR
P.O. BOX 11 TEL.: 2515 PEKIN, ILLINOIS

UTILITIES CONTRACTING CO.
Cable Splicing Specialists
Maintenance and Construction of all types of cable
1011 McCullough Street
Lansing, Mich. Tel. 2-7955

UNDERGROUND CONSTRUCTION
Cable and Wire Plow
Trenching Machines
Fully Equipped for Complete Installation
BJORNSON CONSTRUCTION CO.
Bode, Iowa Phone 2553

WE BUILD AND REPAIR TELEPHONE PLANTS FROM CENTRAL OFFICE TO SUBSCRIBER
CABLE SPLICING & REPAIRING
WILTON ELECT. & TELEPHONE CONSTRUCTION CO.
ANDY MUELLER, Engineer
Telephone 21 Wilton Junction, Iowa

NEALE CONSTRUCTION CO.
ENGINEERING • CONSTRUCTION • MAINTENANCE
TOPEKA, KANSAS PHONE 4-2621

Anniversary

MODERN WOOD PRESERVATION OF THE LOWRY PROCESS BY AMERICAN CREOSOTING COMPANY

That Mr. Lowry and his company were the founders of modern wood preservation is amply proved by the decisions in these suits rendered by the United States Courts and the United States Patent Office.

An extract from these decisions is as follows:

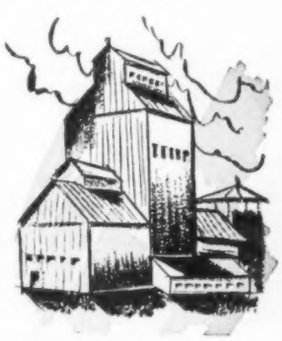
"The Examiner of Interferences found that Lowry conceived the invention long prior to Ruping's introduction of it into this country, and that he did not derive his knowledge of it from Ruping's agents. That he successfully reduced it to practice with an experimental apparatus in the shops of the "Big Four" Railroad Company, at Riverside, Ohio, in November, 1903. That he communicated it to others, and in the spring of 1904 began efforts to build a plant at Shirley, Ind. for the operation of the process, which was prosecuted with diligence, and the process put into commercial operation on the completion of the plant.

"The Examiner-in-Chief concurred with the Examiner of Interferences in all respects save the reduction to practice at Riverside in 1903. On account of Lowry's earlier and independent conception, and subsequent diligence they concurred in awarding the priority to him.

"The Commissioner agreed in all respects with the Examiner of Interferences. We agree also that the evidence is sufficient to show that Lowry, prior to the experiments with the Ruping Process at Perth Amboy in April, 1904, had begun plans for the erection of the Shirley plant, which were diligently followed by completion and the practice of the process on a large scale."

Ruping filed an appeal in the United States Court of Appeals of the District of Columbia. The court upheld the decision of the U. S. Patent Office. Then Ruping filed an appeal in the U. S. Supreme Court, but a hearing was refused on the grounds that the case had been adequately handled by the lower tribunals. These years of litigation established, once and for all, that Lowry was the founder of modern wood preservation.

In this Golden Anniversary year, it is with great satisfaction that Amcreco looks back over a long record of service to industry and to our country in helping conserve the valuable timber resources of the land. Amcreco is also proud of its important contribution to modern forestry in the development of its great Satilla Forest in Georgia. But not content to rest on this record, Amcreco is looking forward to serving both industry and country with the same vision and vigor and high standards which have characterized the Company's policy for the past fifty years.



In an industry where so much depends on service, Amcreco offers facilities second to none. Our plants and sales offices are strategically located for prompt domestic or export shipment. We would appreciate an opportunity to quote on your needs.

AMERICAN CREOSOTING COMPANY

INCORPORATED

Shreveport Creosoting Company
Colonial Creosoting Company
Federal Creosoting Company
Indiana Creosoting Company

AMCRECO
LOWRY PROCESS CREOSOTED WOOD

Georgia Forest Products Company
Gulf States Creosoting Company
Georgia Creosoting Company
Kettle River Company